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NOTE

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ABSTRACT

The UNECE/FAO *Forest Products Annual Market Review, 2001-2002* provides general and statistical information on forest products markets in the UN Economic Commission for Europe region (Europe, North America and the Commonwealth of Independent States). The *Review* begins with a chapter on the policy dimensions and general overview of the forest products markets, followed by a description of the economic situation in the region. Three special chapters are included this year: "Market effects of wood promotion", "Turkey's forest products markets" and "Chile's forest products markets". The market developments in five standard sectors, based on annual country-supplied statistics, are described for: wood raw materials, sawn softwood, sawn hardwood, wood-based panels and paper and paperboard. Regular chapters discuss markets for certified forest products, value-added wood products and tropical timber. In each chapter production, trade and consumption are analysed and relevant material on specific markets is included. Tables included with the text present detailed information and annex tables contain further reference material.

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PREFACE

The sustainable development of the forest and timber sector depends, *inter alia*, on strong forest products markets. Viable markets for wood and non-wood forest products support the economic viability of the whole sector. The entire production chain, from forest to end consumers, benefits from a continual supply of affordable forest-based products, whether they are wood or non-wood.

Accurate, objective, reliable and timely information on and analysis of international trends—in increasingly global markets—are vital for governments and other stakeholders in this sector. From their beginnings in 1948, the UNECE Timber Committee and the FAO European Forestry Commission have placed high priority on monitoring and analysing forest products markets on the basis of data supplied by countries. The *Forest Products Annual Market Review* is the annual flagship publication of the UNECE/FAO integrated programme in the field of timber and forests, serving the Timber Committee and the European Forestry Commission. It is the main background document for the Timber Committee's annual discussion of forest products markets. Furthermore, it is to provide readers all over the world with the earliest comprehensive analysis on recent developments in the forest and forest product sectors in the UNECE region and its trading partners.

This objective of the analysis in the *Review* is in line with the conclusions of senior policy bodies at global and regional levels:

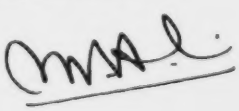
- The UN Millennium Declaration signatories committed themselves to "intensify our collective efforts for the management, conservation and sustainable development of all types of forests".
- The Intergovernmental Panel on Forests and the Intergovernmental Forum on Forests, predecessors of the UN Forum on Forests, called on Governments to "improve market transparency", to "promote responsible producer and consumer choices in the supply and demand for forest products", to "promote policies, as needed, to meet increasing demand for wood and non-wood forest products and services, through sustainable forest management," to "develop and implement policies designed to promote sustainable production of wood and non-wood forest goods and services that reflect a wide range of values", and to "ensure that the benefits of commercialisation of wood and non-wood forest goods and services contribute to improved management of forests and are equitably distributed to the people who protect and provide them" and to "stimulate and promote the sound use of wood as a renewable and environmentally friendly material".
- The Ministerial Conference on Protection of Forests in Europe confirmed the social and economic development function of forests. The ministers stated that, "The production, marketing and consumption of wood and other forest products and services from forests under sustainable management, a key renewable resource, should be actively promoted as a means for improving the economic viability of forest management, taking advantage of new market opportunities."

UNECE and FAO are working to make the analyses they produce more relevant to policy makers and a stimulus and support to meaningful policy discussion in international fora. For example, the *Review* this year contains a first chapter devoted to drawing the policy implications from the other chapters. The policy chapter's themes include:

- the need for policies on the sound use of wood;
- the importance of a cross-sector approach;
- the emergence of several transition countries as specialised players on forest products markets;
- environmental influences on markets via certified forest products.

These themes are intended to stimulate policy discussion at the Timber Committee and the European Forestry Commission sessions in 2002, and, thereby, influence the broader policy discussion in UNECE and FAO, thus contributing to a better understanding of market issues and options in the context of the sustainable development of the forest and timber sector.

This *Review* is the result of contributions, from many colleagues, from our secretariats and partner organizations, as well as from national correspondents and sector experts. We offer our thanks to all those who have contributed, directly or indirectly, to preparing this *Review*.



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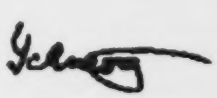

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In addition to those named below, numerous other experts helped on specific parts of the *Review* and their names are mentioned in the following list of contributors. The *Review* is based on statistics received from official country correspondents who are listed in the companion *Timber Bulletin* on "Forest Products Statistics, 1997-2001". Our sincere appreciation goes to these people without whose efforts we would not have been able to produce this *Review*. For some data in the chapter on certified forest products, the UNECE Timber Committee and FAO European Forestry Commission established an informal network of officially nominated country correspondents on certified forest products markets and certification of sustainable forest management. We thank those correspondents who contributed information for this chapter for which there are no other official statistics.

In order of chapter number, we first acknowledge the authors, then all those who helped from the secretariat.

"Market effects of wood promotion" was written by Mr. Peter Hofer whom we thank for also sharing his expertise in this field. Mr. Hofer was formerly the director of Lignum, the Swiss wood promotion organization, and is now a senior advisor with GEO Partner AG, a consulting firm specializing in environmental and resource management in Zurich. He produced the chapter based on valuable contributions from five leaders of wood promotions organizations: Dr. Holger Conrad, Arbeitsgemeinschaft Holz e.V., Germany, Mr. Conrad Gossweiler, Lignum, Switzerland, Mr. Jan Hagsted, Nordic Timber Council, Sweden, Mr. Kelly McClosky, Wood Promotion Network, Canada and Mr. David Venables, American Hardwood Export Council, United Kingdom. One intent of the *Review* is to bring current market developments to light, and the market effects of wood promotion was suggested at the 2001 Timber Committee Market Discussions by the UNECE&FAO Team of Specialists on Forest Products Markets and Marketing. This will also be the theme of the 2002 Timber Committee Market Discussions on 24-25 September.

"Trade links strengthening as Turkey's forest sector is modernized—Turkey's Forest Products Markets, 2001-2002" is the continuation of the *Review* series of special chapters focusing on one UNECE region country. We are indebted to Mr. Ramazan Bali, Director. General Directorate of Forestry, Ankara, for writing this chapter with its insight into the forest and forest industry sector in Turkey. Mr. Bali is a member of the UNECE&FAO Team of Specialists on Forest Products Markets and Marketing. We acknowledge the important contribution of Mr. Ulvi Us, also General Directorate of Forestry, for supplying the statistics. Mr. Us is our statistical correspondent for Turkey. We also thank their directorate, which enabled working on this chapter.

"Chile's forest products markets—a plantation success story" is a chapter continuing the *Review* series highlighting an important forest products trading country from outside the UNECE region. We are grateful for this analysis by its two authors. Production of this chapter was led by Mr. David Cartwright, Forestry Consultant and Special Advisor to the Canadian Council of Forest Industries, from Vancouver, Canada. Dr. Christopher Gaston, Group Leader, Markets and Economics, Forintek Canada Corporation was the co-author. Dr. Gaston is the leader of the new UNECE&FAO Team of Specialists on Forest Products Markets and Marketing. The authors of the chapter travelled to Chile and met with representatives of the Instituto Forestal and the Corporación Chilena de la Madera, to whom we also extend our thanks. Mr. Carlos Marx Carneiro, Regional Forestry Officer, FAO Regional Office for Latin America and the Caribbean in Chile, facilitated and reviewed this chapter.

Dr. Riitta Hänninen, Market Researcher, Finnish Forest Research Institute, wrote the chapter on wood raw material production, trade and consumption titled, "Market in Europe recovering from storm damage, but declining in North America". She did part of the analysis, and another part, along with statistical work on the TIMBER database on wood raw materials, was done by Dr. Volker Sasse, Forestry Officer, UNECE and FAO Timber Section, Trade Development and Timber Division, Geneva, Switzerland. We gratefully recognize their contributions, as well as those of the other researchers in Metla, who provided information and assistance. We appreciate the information for the wood energy section furnished by Ms. Pirkko Vesterinen and Ms. Eija Alakangas, Energy Production Research Scientists with VTT Technical Research Center, Finland.

We thank the authors of the sawn softwood trends chapter: Dr. Robert Kozak, Assistant Professor, Department of Wood Science, University of British Columbia, Canada and Dr. Christopher Gaston, Group Leader, Markets &

Economics, Forintek Canada Corporation. This is the second year that they wrote the chapter and we appreciate this continued cooperation.

For the second time the sawn hardwood chapter was written by Mr. Michael Buckley, a wood industry consultant with World Hardwoods. We are grateful both to Mr. Buckley, who was formerly the European Director of the American Hardwood Export Council (AHEC) and to Mr. David Venables, the current European Director of AHEC, for again facilitating this continued collaboration. Mr. Buckley is Deputy Leader of the UNECE&FAO Team of Specialists on Forest Products Markets and Marketing.

We also express our gratitude on the contribution to the wood-based panels chapter to Mr. Henry Spelter, Research Forester, Timber Demand and Technology Assessment Research Work Unit, Forest Products Laboratory of the USDA Forest Service. This is the third time that he has contributed to this chapter by providing an analysis of the North American market developments. From the European Panel Federation, Ms. Eva Janssens, Economic Advisor, Brussels, contributed information from the Federation's *Annual Report*. She is a member of the UNECE&FAO Team of Specialists on Forest Products Markets and Marketing. Mr. Jorge Najera, Economics Officer, UNECE and FAO Timber Section, Trade Development and Timber Division, Geneva, provided the remainder of the analysis. We thank all of these contributors to the panels chapter.

For the paper, paperboard and woodpulp chapter, the same trio of authors, representing different subregions of the UNECE, contributed again this year. We thank first Dr. Peter J. Ince, Research Forester, USDA Forest Service, United States Forest Products Laboratory, who was the principal author and who coordinated the production of the chapter. And we extend our sincere appreciation for the contributions of the two co-authors, Professor Eduard L. Akim, PhD, Saint Petersburg State Technological University of Plant Polymers and the All-Russian Research Institute of Pulp and Paper Industry and Mr. Bernard Lombard, Recycling and Economics Manager, Confederation of European Paper Industries (CEPI). Again statistical assistance for Mr. Lombard came from Mr. Eric Kilby, Statistics Manager, at CEPI. We simultaneously express our gratitude to Ms. Marie Arwidson, Director General of CEPI, for facilitating this continued collaboration. Dr. Ince worked together with us for one week in Geneva thanks to Mr. Val Mezainis, Director of International Programs, who facilitated his consultancy. Both Mr. Spelter and Dr. Ince work together in a research unit led by Mr. Ken Skog, whom we would also like to thank for providing us with their services. The unit is the Timber Demand and Technology Assessment Research Work Unit, Forest Products Laboratory, USDA Forest Service. Both Dr. Ince and Professor Akim are members of the UNECE&FAO Team of Specialists on Forest Products Markets and Marketing.

We sincerely appreciate the continued working relationship with Dr. Ewald Rametsteiner, of the Institute of Forest Sector Policy and Economics, Vienna, an Expert on Certified Forest Products Markets. He based the chapter on his own knowledge, plus topical information gathered from the above-mentioned informal network of country correspondents on the markets for certified forest products and a survey conducted by Mr. Florian Kraxner, also of the Institute of Forest Sector Policy and Economics. Our thanks go to all of them. Dr. Rametsteiner is also a member of the UNECE&FAO Team of Specialists on Forest Products Markets and Marketing.

For the chapter on value-added forest products markets, including engineered wood products, we would like to recognize the excellent work of the three authors. For the first time we collaborated with Mr. Jukka Tissari, Market Development Officer, International Trade Centre, Geneva Switzerland who wrote the parts on value-added products, drawing in parts from work by colleagues at the International Tropical Timber Organization (ITTO). He also wrote the chapter's forward-looking conclusion. The sections on engineered wood products, as in previous years, were co-authored by Mr. Craig Adair, Director, Market Research, APA-The Engineered Wood Association, Tacoma, Washington and Dr. Al Schuler, Research Economist, Northeast Forest Experiment Station, USDA Forest Service, Princeton, West Virginia. Both Mr. Tissari and Dr. Schuler are members of the UNECE&FAO Team of Specialists on Forest Products Markets and Marketing. We continue to compliment the analysis of primary-processed products with some indications of demand from secondary-processed products through the valuable work of these authors.

Dr. Schuler also was again the main author, along with Mr. Adair, of the section construction developments in the economic chapter. We express our gratitude to both for this key contribution too.

We value highly the continued cooperation with our colleagues in ITTO, Drs. Steve Johnson, Statistician/Forest Economist, and Michael Adams, Market Information Service Coordinator along with Ms. Masaki Miyake, Statistical Assistant. They summarized tropical timber markets developments from their *Annual Review and Assessment of the World Timber Situation 2001* and updated it with current market developments. Drs. Adams and Johnson are also members of the UNECE&FAO Team of Specialists on Forest Products Markets and Marketing.

We express our sincere gratitude to Messrs. Eetu Einiö and Jussi Haapkylä, our two assistants during the summer 2002 production phase of the *Review*. Messrs. Einiö and Haapkylä are forest products marketing graduate students at University of Helsinki, Department of Forest Economics. They produced all the graphics, and some tables and figures. In doing so they revised the *Graphics Production System* which had been started by their predecessors from the University of Helsinki. They also performed market research for the authors in preparation of chapters. Mr. Haapkylä continued the development of the *Review Planning System*, which has become essential because of the complexity of the production process and the number of people involved. He also expanded the Market Information Service website as part of his personal projects. Mr. Einiö formalized the *Review Production Manual*, which is an assembly of all the different guidelines and instructions used to produce this publication. In our experience, not only is engaging interns for the production of the publication necessary, but it is mutually advantageous. Their internships were facilitated by Dr. Heikki, Juslin, Professor, and Mr. Jari Kärnä, Assistant, Forest Products Marketing, Department of Forest Economics, University of Helsinki, and Ms. Raija-Riitta Enroth, Senior Researcher, Finnish Forest Research Institute, who arranged funding through the Foundation for the Promotion of the Export of Forest Industry Products. Prospective interns are encouraged to apply to work with the UNECE/FAO Timber Section.

This *Review* was produced as a joint effort by 42 people. Ed Pepke (UNECE/FAO Timber Section) led and coordinated the work. The individual chapters had the following authors: 1. Ed Pepke and Kit Prins (UNECE/FAO Timber Section); 2. Kit Prins (drawing on the UNECE *Economic Survey of Europe*), plus for the construction section, Al Schuler and Craig Adair (United States); 3. Peter Hofer (Switzerland) with input from Holger Conrad (Germany), Conrad Gossweiler (Switzerland), Jan Hagsted (Sweden), Kelly McClosky (Canada) and David Venables (United Kingdom); 4. Ramazan Bali (Turkey); 5. Riitta Hänninen (Finland) based on statistical analysis by Volker Sasse (UNECE/FAO Timber Section); 6. Robert Kozak and Christopher Gaston (Canada); 7. Michael Buckley (United Kingdom); 8. Henry Spelter (United States) and Jorge Najera (UNECE/FAO Timber Section); 9. Peter Ince (United States), Eduard Akim (Russian Federation) and Bernard Lombard (CEPI); 10. Ewald Rametsteiner (Austria); 11. Jukka Tissari (ITC), Craig Adair and Al Schuler (United States); 12. Steve Johnson, Michael Adams and Masaki Miyake (ITTO). Alex McCusker (UNECE/FAO Timber Section) produced the statistics, wrote some statistics-related passages and proofread. Graphics production and market research were by Eetu Einiö and Jussi Haapkylä (Finland). Matt Fonseca (UNECE/FAO Timber Section) was responsible for the layout of the text, tables and graphs, as well as performing all administrative duties. We welcome him to the Review Team. He was assisted at the end of the process by Romi Chopra (Trade Development and Timber Division), Isabelle Hay and Helena Simkova (UNECE/FAO Timber Section). Sefora Kifle (UNECE/FAO Timber Section) prepared price data and supported authors with documents and journals. Christina O'Shaughnessy (Trade Development and Timber Division) was the principal copy editor, and she also proofread most of the publication. Carlos Marx Carneiro, Wulf Killman and Miguel Trossero (FAO) contributed to the content editing during the FAO review step. Most content editing was done by Ed Pepke and Kit Prins.

This manuscript was completed on 2 August 2002. It is my pleasure to personally thank all members of the Team, and the many other contributors, whether in Geneva or far away, for their devoted efforts in producing this year's *Forest Products Annual Market Review*.

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DATA SOURCES

The data on which the *Forest Products Annual Market Review* analysis is based are collected from official national correspondents[1] through the FAO/ECE/Eurostat/ITTO Joint Forest Sector Questionnaire, distributed in April 2002. Within the 55-country UNECE region, data for the 19 EU and EFTA countries are collected and validated by Eurostat and for other UNECE countries by UNECE/FAO Geneva.

The statistics for this *Review* are from the TIMBER database system. As the database is continually being updated, any one publication's analysis is only a snapshot of the database at that particular time. The database and questionnaires are in a state of permanent development. Data quality differs between countries, products and years. So far, only a few countries of the CIS subregion provide data although the largest producer (Russian Federation) does do so. Improvement of data quality is a continuing task of the Secretariat, paying special attention to the CIS and central and eastern European countries. With our partner organizations and national correspondents, we strongly believe that the quality of the international statistical base for analysis of the forest products sector is steadily improving. Our goal is to have a single, complete, current database, validated by national correspondents, with the same figures available from FAO in Rome, Eurostat in Luxembourg, ITTO in Yokohama and UNECE/FAO in Geneva. We are convinced that the data set used in the *Review* is the best available anywhere as of July 2002. The data appearing in this publication form only a small part of the total data available. *Forest Products Statistics* (Timber Bulletin #2) will include all the data available for the years 1997-2001. The TIMBER database is available on the Market Information Service of the Timber Committee website at www.unece.org/trade/timber/mis.htm.

The secretariat is grateful that correspondents provided actual statistics for 2001 and, in the absence of formal statistics, their best estimates. Therefore all statistics for 2001 are provisional and subject to confirmation next year. The responsibility for national data lies with the national correspondents. The official data supplied by the correspondents account for the great majority of records. In some cases, where no data were supplied, or when data were confidential, the Secretariat has estimated figures to keep region and product aggregations comparable and to maintain comparability over time. Although estimations are not indicated within this *Review*, they are flagged in the *Forest Products Statistics*. Data for Belgium and Luxembourg are combined through 1998 while after this year the data are reported separately.

In addition to the official statistics received by questionnaire, trade association and government statistics are used to complete the analysis for 2001 and early 2002. A number of trade journals and internet sites were used for supplementary information, as well as institutions and experts, including national correspondents. Most of these sources are cited in the text and in the annex.

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[1] Correspondents are listed in the companion *Timber Bulletin*, "Forest Products Statistics, 1997-2001".

EXPLANATORY NOTES

"Apparent consumption" is calculated by adding a country's production to imports and subtracting exports. Apparent consumption volumes are not adjusted for levels of stocks because all countries cannot report stocks.

"Net trade" is the balance of exports and imports and is positive for net exports, i.e. when exports exceed imports, and is negative for net imports, i.e. when imports exceed exports. Trade data for fifteen European Union countries include intra-EU trade, which is often estimated by the countries. Export data usually include re-exports.

The term "central and eastern Europe countries", used exclusively for presentational convenience, includes Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia, Slovenia, The former Yugoslav Republic of Macedonia and Yugoslavia.

As in last year's *Review*, Europe has been split into "EU/EFTA" (19 countries) and "Other Europe" (34 countries). For a breakdown of the regions please see the map in the annex.

The term "softwood" is used synonymously for "coniferous." "Hardwood" is used synonymously for terms "non-coniferous" or "broadleaved" wood. More definitions appear in the annex.

SYMBOLS AND ABBREVIATIONS USED

-	nil or negligible
...	not available
$	United States dollar unless otherwise specified
AFPA	American Forest and Paper Association
C$	Canadian dollar
CEPI	Confederation of European Paper Industries
CFP	certified forest products
CIS	Commonwealth of Independent States
CPA	Composite Panel Association
DIY	Do-it-yourself
ECE	Economic Commission for Europe
EFSOS	European Forest Sector Outlook Studies
EFTA	European Free Trade Association
EPF	European Panel Federation
EQ	equivalent of wood in the rough
EU	European Union
EWP	engineered wood products
FEP	European Federation of the Parquet Industry
FOB	free on board
GDP	gross domestic product
IMF	International Monetary Fund
ITTO	International Tropical Timber Organization
kph	kilometres per hour
m^2	square metre
m^3	cubic metre (solid volume of roundwood or processed product)
MSR	machine stress rated
m.t.	metric ton
N.A.	not applicable
NIEs	Newly industrializing economies
OECD	Organization for Economic Co-operation and Development
OPEC	Organization of Petroleum Exporting Countries
SPWP	secondary processed wood products
USDA	United States Department of Agriculture
WWF	World Wide Fund for Nature

Chapter 1
Forest products markets in 2001 and early 2002
The policy dimension and overview

Highlights

- Viable forest products markets, supported by policy reforms, underpin sustainable development in some central and eastern European countries' forest and forest products sector, as evidenced by their having become significant players in international forest products markets.
- Following 10 years of growth, consumption of primary-processed forest products in the UNECE region declined sharply in 2001, falling by 3% overall, the greatest one-year drop since the1970s oil crises and 1990s break-up of the USSR.
- In contrast to developments in the other subregions of the UNECE region, consumption of wood products in the Commonwealth of Independent States (CIS) subregion, notably the Russian Federation, gained 7% in 2001, approximately the same as in 2000.
- Due only to the extraordinary strength of the United States housing-related demand for wood products, the North American subregion did not sink to further depths in 2001.
- Consumption of sawnwood fell in the UNECE region in 2001, by 4% for both softwoods and hardwoods; United States production decreases opened the door for increased imports from Canada, despite continuing trade disputes, and European countries as well as for growing volumes from southern hemisphere, plantation-based suppliers.
- Market effects from Europe's catastrophic windstorms in late 1999 continued to influence wood raw materials and some primary processing sectors in 2001.
- Influenced by a strong dollar in 2001, trade patterns and competitive positions will change in 2002 with the fall in value against the euro and the yen.
- Structural change is occurring in United States and western European furniture manufacturing as production decreases rapidly, replaced by imports from central and eastern European and developing, including tropical, countries.
- Certified forest product markets grew exponentially in 2001, but remained small compared to certified forest area, which surged to 124 million hectares in mid-2002, of which 90% is in the UNECE region.
- Due to industry restructuring, and demand in construction, furniture and flooring, panels markets continued to expand in 2001, achieving new production records for oriented strand board (OSB) and medium density fibreboard (MDF).
- Cross sectoral policy issues directly influence the forest products sector and both market stakeholders and policy decision makers must be aware of their current and future consequences.

1.1 The policy dimension of forest products markets[1]

1.1.1 *Forest products markets in the context of sustainable development*

Sustainable development of the forest and timber sector depends, *inter alia*, on strong forest products markets. Viable markets for wood and non-wood forest products support the economic viability of the whole sector. The entire production chain, from forest to end consumers, benefits from a continuous supply of affordable forest-based products, whether they be wood or non-wood.

The critical link between sustainable forest products markets and sustainable forest management was stressed by the joint session of the UNECE Timber Committee and the FAO European Forestry Committee in 2000. Neither can exist in isolation—each needs the other to be viable. This publication's analysis focuses on primary and secondary processed wood products, but non-wood forest products and services—such as recreation—also play an important role in the economic viability of the sector. However, income from the sale of wood is the mainstay of economic sustainability of the forest management.

This approach by the Committee and the Commission is in line with the conclusions of senior policy bodies at the global and regional level:

- In the Millennium Declaration, the signatories committed themselves to "intensify our collective efforts for the management, conservation and sustainable development of all types of forests".
- The Intergovernmental Panel on Forests and the Intergovernmental Forum on Forests (IFF), predecessors of the UN Forum on Forests, called for action to improve market transparency, taking into account the role of the private sector, to help promote responsible producer and consumer choices in the supply and demand for forest products, forest services and their substitutes. Furthermore, the IFF asked Governments to "promote policies, as needed, to meet increasing demand for wood and non-wood forest products and services, through sustainable forest management". The IFF also called on countries to "develop and implement policies designed to promote sustainable production of wood and non-wood forest goods and services that reflect a wide range of values, and to ensure that the benefits of commercialisation of wood and non-wood forest goods and services contribute to improved management of forests and are equitably distributed to the people who protect and provide them". The IFF requested Governments to explore "strategies to stimulate and promote the sound use of wood as a renewable and environmentally friendly material".[2]
- The Ministerial Conference on Protection of Forests in Europe confirmed the social and economic development function of forests, especially in rural areas, by committing to optimizing the European forest sector's contribution to the sustainable development of society in the 21st century, especially to the development of rural areas, while respecting the social, economic and cultural functions of forests. The ministers stated that the "production, marketing and consumption of wood and other forest products and services from forests under sustainable management, a key renewable resource, should be actively promoted as a means for improving the economic viability of forest management, taking advantage of new market opportunities".

1.1.2 *Need for policies on the sound use of wood*

Consumption and production of all forest products combined fell sharply in Europe in 2001. This was the steepest fall since the first oil shocks in the 1970s and the collapse of the Soviet Union in the early 1990s. Only the unexpected and exceptional strength of the United States housing market prevented similar developments in North America. Paper consumption in North America also dropped amid signs that this is more than a cyclical downturn owing to weak final demand. This might be the first signal of a structural change in the long-term growth trend for paper and paperboard. Paper is facing increasing competition from electronic media, e.g., the Internet, television and radio. Only engineered wood products and a few other sophisticated, client-oriented, specialized products (as opposed to commodity grades which compete essentially on price) showed strength and increased their market share compared with competitors such as plastics, aluminium or other forest products.

These difficult market conditions depressed prices both for products and for roundwood, reducing

[1] In the past, the *Forest Products Annual Market Review* began with an overview of forest products market developments in the UNECE region, however this initial section was added as a response to a request by the UNECE Executive Secretary to highlight policy relevant issues.

[2] A seminar on strategies to stimulate and promote the sound use of wood as a renewable and environmentally friendly material will be held under the auspices of UNECE and FAO in March 2003 in Poiana Brasov, Romania.

operating margins and employment in the sector. A structural threat to the economic viability of forest management in Europe may thus be emerging. The underlying causes may be summarized as follows:

- Forest owners provide a wide range of goods and services to society although they rely essentially on wood sales for revenue; most of them have high costs and few opportunities to achieve economies of scale. This applies particularly to the millions of small-scale private forest owners all across Europe, but also, and increasingly, to State forest services.
- The necessarily long-term nature of investment in forest management is difficult to reconcile with the short-term pressures influencing most markets.
- Globalization of forest products markets means countries with favourable growing conditions in other parts of the world have exposed European forest owners to competition which they are ill equipped to face, except in a few more specialized countries, e.g. in the Nordic and Baltic regions, and increasingly also in central and eastern Europe. European consumers, however, have benefited from the lower costs associated with economies of scale.
- There is strong competition in the marketplace from substitute materials, including plastics, concrete, brick, aluminium and steel. However, these materials are not as environmentally friendly as wood, and their prices do not fully incorporate the environmental costs associated with their life cycle.

In most countries, the forest owner, private or public, is a "price-taker" and must absorb most of the loss in profit for the whole chain. Furthermore, private owners rarely have the possibility of adapting to mitigating strategies unless they receive some form of public assistance. One option they have, which has been successful in some areas, is to reduce their risks and widen their options by forming forest owner associations. Increasingly, forest owners have other sources of income e.g. from an urban job, or agriculture. The loss of income to rural families must be considered a significant social problem, which should be addressed in the context of economic and social viability.

What policy options exist to ensure sustained economic growth in the forest and timber sector? A first step would be to consider explicitly downstream, market issues in the context of policies for sustainable forest management. Thus these policies would become policies for the sustainable development of the forest and timber sector as a whole. This approach is in line with the recommendation in the IFF Proposals for action that Governments develop "strategies to stimulate and promote the sound use of wood and other forest products as an environmentally friendly and renewable raw material".

What could be the components of such an approach? The answers will vary widely according to circumstances, but some elements would probably feature in most countries. In recent years, the Timber Committee has identified a number of issues, some of which are listed below:

- Encourage the use of wood. The main features of such campaigns and their market effects are discussed in a special chapter of this *Review*.
- Develop new markets. This involves large-scale investment which is difficult for many of the actors, industry or forest based, who operate on a rather small scale.
- Develop new products. New products from and applications of wood and wood composites must meet customers' needs better.
- Incorporate downstream, market issues into national forest programmes and other forest sector policies. Markets for wood and other forest goods and services, including non-wood forest products and services must be an integral part of upstream planning.
- Expand forest owners' income. Seek other sources of income than wood, for instance through contracts to provide environmental services or partnerships with tourism and water agencies, whose own success depends critically on the presence of attractive and sound forests.
- Improve communication and coordination. The splintered parts of the "wood chain" can actually be an effective amplifier of communication through coordination of forest and industry owners, wood buyers and processors, traders, wholesale and retail organizations, consumer and environmental organizations.
- Sponsor further research into the life cycle analysis of wood. Ensure that the research already done, e.g. in the European Union and the United States, is better known and more accessible.[3]
- Further develop communication with the public, to improve the general knowledge and image of the forest and timber sector and to dispel many misconceptions.

The importance of stimulating sound use of wood and highlighting the long-term economic viability of the forest and timber sector has been recognized in a

[3] For example *Environmental and Energy Balances of Wood Products and Substitutes*, FAO, 2002 and *A Summary of "The Competitive Climate for Wood Products and Paper Packaging: the Factors Causing Substitution with Emphasis on Environmental Promotions"*, UNECE/FAO, 1999.

number of major international forums. A selection of their recommendations is set out above. In addition, the draft "Vienna Declaration" to be presented to the Ministerial Conference in April 2003, contains a commitment to "work towards enhancing the potential for economically viable sustainable forest management in Europe".

However, it appears that the question of promoting the sound use of wood has been less politically visible than other aspects of sustainable development of the sector, although, at the highest level, there is a strong consensus that a holistic approach is necessary. In the opinion of the UNECE/FAO secretariat, more attention needs to be paid to "downstream" (market) aspects, to ensure a truly balanced approach to the complex issues facing the sector.

1.1.3. *Emergence of some transition countries as forest sector specialists*

In the last 10 years there have been fundamental and disruptive economic and social changes in the so-called transition countries. Apart from the broader developments, which have been recorded and analyzed in many places, including the UNECE *Economic Survey of Europe*, the forest and timber sector has seen many fundamental changes, including:

- Widespread privatization and restitution of forest in many countries, leading in some cases to uncontrolled cuttings by inexperienced and mistrustful new owners, some with an urgent need for immediate cash.
- Severe disruption of commercial relations and market channels and market intelligence, notably reliable statistics, leading to many bankruptcies and much unemployment.
- Multiple changes of institutional structures, and profound changes in the role of the national forest services, leading to completely revised forest sector institutions, which are all explicitly committed to sustainable forest management, as defined in the international instruments drawn up in the 1990s.
- Foreign direct investment in a few countries.
- Privatization of forest industries and harvesting operations.

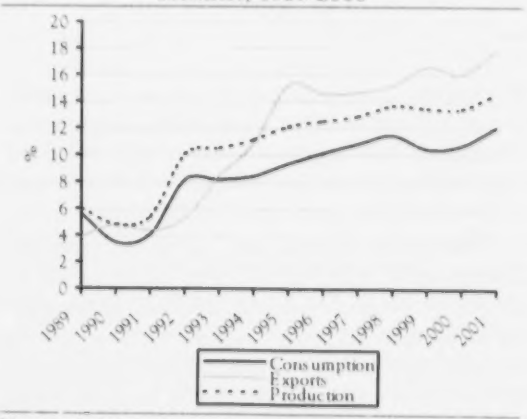
The first half of the 1990s was marked by steep drops in consumption and production of wood and forest products in almost all countries. Removals in Russia, the world's largest forest country, fell to a quarter of their mid-1980s level.

However, a new picture is beginning to emerge, at least in the advanced reform countries of central Europe and the Baltic region i.e. Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia and Slovenia. The new institutions appear to be functioning more efficiently and these countries are building on their strengths to develop their forest and timber sector. Their strengths include a well-managed and productive forest resource, a skilled and well-educated workforce, closeness to major markets, and a strong forest and timber tradition. As a result:

- Domestic consumption has recovered rapidly and is now growing strongly (graph 1.1.1).
- Production and exports of roundwood as well as sawnwood have increased faster than for Europe as whole, as these countries increase their market share.
- Trade flows from these countries, previously distorted by the CMEA (COMECON) system have changed fundamentally, with Europe, Asia and now North America, taking the place of the former Soviet Union as export destinations.
- Employment in the wood and wood products sector in four central European countries (Czech Republic, Hungary, Poland and Slovakia) has increased, contrary to the trend for manufacturing production as whole (see chapter 2). The Czech Republic, Hungary and Poland are becoming specialized in wood and wood products. Similar developments have occurred in the Baltic countries, which have become major players in European pulpwood and sawnwood markets.
- An export-oriented furniture industry has developed fast in Poland and some other countries, including Romania (see chapters 8 and 12).

GRAPH 1.1.1

Shares of European production, exports and consumption by selected central and eastern European countries, 1989-2001



Note: Included Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia and Slovenia.
Source: UNECE/FAO TIMBER database, 2002.

In summary, for this group of countries, the policy and institutional reforms triggered by the transition process are now bearing fruit, and these countries may be on the path to a sustainable expansion of the levels of output of their forest and timber sector. Furthermore, some or many of them are becoming "specialized players" on European forest products markets, alongside (although not on the same scale as) such traditional specialists as Finland, Sweden or Austria.

In Russia, institutional change is still under way, and many plants have closed definitively, because of outdated equipment or uneconomical location (owing to distorted transport costs under the former system). However:

- Some of the surviving plants have been able to invest and prosper, sometimes with injections of foreign capital.
- Domestic demand, at least in Moscow and St. Petersburg, is recovering.
- Removals have started to rise. They are probably higher than stated because of unreported, possibly illegal, removals.
- Exports, especially of roundwood, fell only slightly, compared with domestic consumption, and are now recovering, including to the world's newly significant importer, China (see special chapter in the 2000 *Review*). However, in mid-2002, President Vladimir Putin of the Russian Federation announced that roundwood exports must be stopped and replaced with added-value products.

There is no doubt of the potential for higher removals, production, consumption and exports in Russia, all on a sustainable basis, provided basic institutional problems can be resolved, and investment found. The UNECE Trade Development and Timber Division project on "Capacity Building to Improve Trade Finance and Investment Prospects for the Russian Forest Sector" has confirmed this for one important region, northwest Russia.

The situation is, however, less positive for the forest and timber sector of most countries in southeast Europe and the CIS where institutional reform has not progressed so far, inside and outside the forest and timber sector. Less information is available about these countries, but it is clear that they are far from emerging from the transition process.

1.1.4 Importance of cross-sectoral issues

The case of Turkey (chapter 4) serves as an example of the importance of addressing cross-sectoral issues. In recent years the Turkish forest and timber sector has been undergoing a marked and sometimes painful transition from a traditional, rural, small-scale structure to that of a modern economy. Changes include significantly increased trade flows, lower product prices owing to competition on global markets, more prosperous, urban consumers, higher quality products, closure of uneconomic mills, with resulting unemployment and the birth of a new wood-based panel industry.

This profound transformation in the forest and timber sector has taken place essentially because of developments outside the sector, notably Turkey's increasing openness to the world economy and its potential for European Union membership. Trade and market opportunities arising around the Black Sea and in central Asia are direct consequences of the process of transition from centrally planned to market economies in many of Turkey's trading partners.

This is a further demonstration, of the importance of a cross sectoral policy approach to understanding developments in the forest and timber sector. The actors in the forest and timber sector, public and private, must be fully aware of, and understand, broader policy and social developments. They must also be sufficiently flexible to adjust to changes, which in most cases, they cannot influence, and to seize new opportunities.

Another example of cross-sector interactions is energy (see chapter 6 for a discussion of wood energy trends) and environment policy measures which have interacted in some intended and unintended ways and have created and are creating significant new trade flows. For example, the carbon tax in place in Sweden has created a lively market for energy wood (which of course does not have to pay the carbon tax). For Swedish wood suppliers, this "new" market (energy supply is in fact the oldest wood use of all) now augments the traditional roundwood markets of pulpwood and sawlogs. In Germany, environmental policy has led to the imposition of differentiated disposal charges, which have made the disposal of used wood (especially if treated), increasingly expensive. Middlemen have used the combination of these two policy measures to create a lively export trade in recovered wood from Germany to Sweden, where large, well-equipped wood burning plants can burn the treated wood without harmful emissions.

Furthermore, commitments by the Government of the Netherlands under the Kyoto Protocol have encouraged power generators in that country to increase their intake of renewable fuels. However, not enough biofuels are at present available in the Netherlands to meet these long-term commitments. Thanks to the UNECE project on Capacity Building to Improve Trade Finance and Investment Prospects

for the Russian Forest Sector, this has become an export opportunity for sawmills in northwest Russia which are developing their potential to satisfy this demand.

There are, no doubt, more examples of policy changes in other sectors influencing developments in forest products markets. Future editions of the *Review* will devote particular attention to identifying them, analysing their consequences and drawing them to the attention of stakeholders and policy makers inside and outside the forest and timber sector. A more systematic, long-term, approach to the same issues is being developed in the UNECE/FAO forest sector outlook (EFSOS) programme.

1.1.5 *Issues linked to certification of sustainable forest management*

One means of encouraging mutual support between trade and environment policies in the timber area has been certification that wood products originate from sustainable managed forests. This process involves both certification of forest management and a chain-of-custody and labelling system which provides the final consumer with the assurance that the purchased product does in fact originate from a sustainably managed forest. For five years the Committee and the Commission have been monitoring developments in this field (chapter 11, which will be complemented by an annual update of trends, to be published as a *Geneva Timber and Forest Discussion Paper*).

The Committee and the Commission follow these developments with keen interest because of the impact on the markets and forest management in the region. To date they view certification as an important communication tool to inform consumers that consumption of the region's forest products, both paper and wood, are both environmentally sound and often essential for sustained forest management. Many costs of forest management, including production of non-income bearing goods, e.g. biodiversity, and services, e.g. landscapes, can only be supported by profitable wood production. There is growing forest area and wood volumes within the UNECE region, as opposed to some other areas of the world, and wood and wood products are increasingly produced within environmentally friendly guidelines and legislation, with the result that the region's consumers can use, reuse and recycle wood and paper with complete confidence in its sustainability in the short and long term.

The competing certification systems in place have, as of summer 2002, certified about 124 million hectares, worldwide. This figure has been increasing exponentially over the last three years. However, only a small proportion of the products derived from these certified forests are in fact sold with a label identifying them as certified forest products, owing to lack of capacity in the chain-of-custody systems. This unsatisfactory situation:

- Deprives information to those who seek assurance about sustainable forest management.
- Deprives suppliers of any price premium or public relations benefit they have been seeking.
- Deprives bodies such as the Committee and the Commission of a communication tool to carry the message about the sustainability of wood supply in Europe.

Almost all of the certified forest is in the UNECE region. This situation will probably to continue for some time, despite the initial focus on tropical deforestation. Furthermore, it is likely that most of the markets for certified forest products will, for the foreseeable future, also be in the region.

At the policy level, government action is limited in view of the consensus at the international forest dialogue that certification should be a voluntary, market-driven system. However, some Governments have expressed concern at the proliferation of certification systems, fearing that the resulting consumer confusion could harm the objective of promoting the sound use of wood.

At the upstream end of the "wood chain", in the forest, some Governments have facilitated certification of forests (public and private) in their country, for instance by organizing participatory processes to draw up guidelines for sustainable forest management which could thereafter qualify for certification under one or more of the competing systems.

Because of concern about illegal logging, some public procurement policies (at the national, subnational and local levels) have been linked to the provision of certificates of origin, so that purchasers may at least have the assurance that the product does not arise from illegal logging or trade. It is possible that Governments in developed countries will increasingly seek to develop formal policies as regards public procurement of forest products. Some Governments have already taken steps in this direction by putting in place requirements that publicly procured wood products not arise from illegal logging or trade.

In summary, certification is a visible issue. It has policy implications at the local, national and international level. Owing to the increasing globalization of markets and communication, Governments have a range of policy options to take in this area.

1.1.6 *Conclusions as regards the policy dimension of forest products markets*

On the basis of the information presented and analysed in the *Review*, this section has identified, a number of issues of concern connected with forest products markets:

- Forest products markets have a role to play in sustainable development of the forest and timber sector.
- Policies are needed for the sound use of wood.
- Policy reforms, in the forest and timber sector and elsewhere, undertaken in certain advanced reform countries are now bearing fruit: some of these countries are becoming significant players on international forest products markets.
- Russia has the potential to expand greatly its timber production, on a sustainable basis, provided certain institutional problems are resolved and investment found.
- Cross-sectoral policy issues are of vital importance for the future of the forest and timber sector. Policy makers, market actors and other stakeholders must be aware of these and be flexible in adapting to them. Likewise, policy makers in other sectors should explicitly consider the consequences of their decisions for the forest and timber sector.
- Certification of forests for sustainable management is developing rapidly and Governments at all levels have multiple policy options.

These conclusions, as well as the analysis of the other chapters of the *Review*, will form the basis for discussions at the sessions in 2002 of both the Timber Committee and the European Forestry Commission. Each of them have a mandate to formulate regional policy issues for the use of member governments as well as of global bodies such as the FAO Committee on Forests and the UN Forum on Forests.

1.2 Overview of forest products markets in 2001 and early 2002

Following 10 years of growth, aggregate consumption of primary-processed forest products in the UNECE region declined sharply in 2001, falling by 2.9% overall (table 1.1.1). The only other periods that experienced falls of greater magnitudes were the 1970s oil crises and the 1990s break-up of the Soviet Union. Of the region's fall, 70% was due to reduced consumption of wood products in North America, which was in economic recession, as was Europe.

In contrast to developments in the other subregions of the UNECE region, consumption of wood products in the Russian Federation grew 7.1% in 2001, approximately the same annual gain as in 2000. The region-wide decline in wood products consumption would have been worse had not the Russian Federation continued improving consumption as the country climbed back towards its late 1980s consumption peak.

It was only due to the strength of the United States housing demand for wood products that the North American subregion did not sink to further depths in 2001. Despite a poor economic climate, the United States continued its high rate of housing construction, which is based primarily on wood—both softwoods for framing and hardwoods for millwork and furniture. Spurred by low interest rates, which were cut no less than 10 times in 2001, plus a strong demand for the financial security of home ownership, 1.6 million primarily wooden homes were built in 2001. The forecast is for similar levels of construction in 2002.

Sawnwood demand in North America, as measured by apparent consumption, was down by 5 million m^3. Presumably this reflects a reduction in other wood-using sectors, as, similar to the trend in the United States, Canadian housing construction continued increasing to 163,000 houses, a 20% increase since 1998, with further gains achieved in early 2002. The United States manufacturing as a whole was in recession in 2001, accounting for considerable decreases in packaging and transportation requirements, for example wooden pallets. These and other industrial uses of wood account for a sizable percentage of the decline in consumption.

Europe, too, was in recession in 2001 and consumption of wood products fell in the EU/EFTA subregion by 2.4% and on smaller volumes in the "Other Europe" subregion,[4] by 6.2%. European demand for forest products was dragged down by serious construction declines in Germany, with associated decreases in sawnwood, furniture and millwork.

Paper and paperboard and woodpulp consumption fell heavily in North America by 5 million m.t. for the second successive year as the economic recession resulted in less demand for advertising and paper packaging. Consumption of paper and paperboard also fell in Europe, both EU/EFTA and "Other Europe", but rose by 15% in the Russian Federation, albeit on smaller volumes.

[4] For purposes of the analysis throughout this *Forest Products Annual Market Review*, the UNECE region is sub-divided into four subregions: CIS, EU/EFTA, North America and "Other Europe". This division of Europe enables closer analysis of the changes in the central and eastern European countries.

TABLE 1.1.1

Apparent consumption of sawnwood[a] wood-based panels[b] and paper and paperboard in the UNECE region, 1998-2001

						Change 2000 to 2001	
	Thousand	*1998*	*1999*	*2000*	*2001*	*Volume*	*%*
EU/EFTA							
Sawnwood	m^3	89 206	88 446	92 720	90 604	-2 116	-2.3
Wood-based panels	m^3	40 745	42 309	45 249	43 278	-1 971	-4.4
Paper and paperboard	m.t.	73 267	78 199	78 611	77 559	-1 053	-1.3
Total	m^3 EQ[c]	456 296	474 303	487 242	477 134	-10 108	-2.1
Other Europe							
Sawnwood	m^3	14 978	15 836	19 040	18 060	-981	-5.2
Wood-based panels	m^3	9 235	9 006	10 766	10 647	-120	-1.1
Paper and paperboard	m.t.	8 595	8 962	10 212	9 783	-429	-4.2
Total	m^3 EQ[c]	67 880	70 128	82 311	79 095	-3 216	-3.9
Russian Federation							
Sawnwood	m^3	14 731	12 683	12 257	12 278	21	0.2
Wood-based panels	m^3	2 603	3 031	3 693	4 227	535	14.5
Paper and paperboard	m.t.	2 128	2 848	3 415	3 925	511	15.0
Total	m^3 EQ[c]	34 948	34 797	37 095	39 714	2 620	7.1
North America							
Sawnwood	m^3	130 514	137 112	136 083	131 196	-4 886	-3.6
Wood-based panels	m^3	54 829	60 507	62 624	62 503	-121	-0.2
Paper and paperboard	m.t.	98 738	104 240	102 803	97 840	-4 963	-4.8
Total	m^3 EQ[c]	631 268	669 563	666 435	641 597	-24 838	-3.7

[a] Excluding sleepers. [b] Excluding veneer sheets. [c] Equivalent of wood in the rough, 1 m^3 of sawnwood and wood-based panels = 1.6 m^3, 1 m.t. paper = 3.39 m^3.

Source: UNECE/FAO TIMBER database

Coupled with a drop in demand in 2001, the rising strength in the dollar also affected forest products markets in the region. United States exports of wood products continued their 6-year decline, accelerated by the strong dollar, which constrained exports but which drove wood products imports to uncharted levels. This ever-widening trade deficit in wood products could slow with the dollar weakening significantly in mid-2002 and achieving parity with the euro. Europeans have been trading in euros for 2 years, but in January 2002 the new euro currency appeared and has become the common currency in 12 of the 15 European Union members. (In 2002 the euro was not the official currency of Denmark, Sweden and the United Kingdom, although they trade some forest products in euros when exchange rates are advantageous.)

Simultaneous recessions in the United States, Europe and Japan, i.e. all three major economies together, weighed down trade, both intraregionally and interregionally. Those markets which are truly global, such as paper, paperboard and woodpulp, suffered the most. Most grades of paper faced weakened domestic demand and lower export demand for European and North American producers. The manufacturing recession diminished demand for paperboard packaging. In North America the result was continued rationalization of manufacturing capacity, while globally capacity growth slowed. Trade in paper, paperboard and woodpulp declined in 2001 for the region as a whole; however, the Russian Federation expanded exports, in part due to the lower value of the rouble. Russian imports of paper and paperboard rose more, and for the first time Russia became a net importer of paper and paperboard.

The UNECE subregions' exports exhibit opposite trends and rates of change. Exports primary-processed forest products from the CIS subregion have grown the most over the last four years, rising steadily to regain previous highs (graph 1.2.1). All other subregion's exports declined in 2001, following growth over the last 2 or more years. "Other Europe's" exports climbed consistently over the past years, in contrast to much slower growth for EU/EFTA and North America.

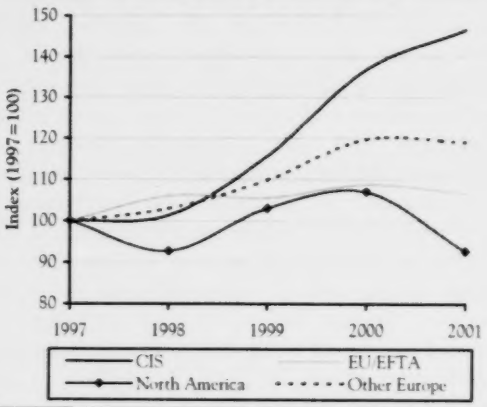
North America ranks second in primary-processed wood products exports, at $38 billion, behind the EU/EFTA subregion with $59 billion. Prior to 1992, the United States was a net exporter of forest products, but since that time the trade deficit in primary forest products has widened dramatically. For reference, in 2001 "Other Europe" was at $5.4 billion and the CIS at $4.5 billion.

Structural changes in trade patterns are taking place as a consequence of globalization of trade, facilitated by economical land and sea transport. Central and eastern European countries and developing countries outside the UNECE region are increasingly becoming timber supply sources for western European and North American countries. And these supply chains are no longer solely for wood raw materials—these countries are continually improving their manufacturing and marketing abilities to compete on an equal basis in western and developed countries' marketplaces. This change is illustrated within Europe by the increasing specialization of central and eastern European countries (CEECs) in higher-value wood products manufacturing, for example in furniture production. The same is occurring in tropical timber countries where steady progress has been made in capturing value-added processing benefits to further develop the forests and industries, and their socio-economic conditions. Some CEECs can no longer be categorized as "countries in transition to market economies" because they have superseded this economic development stage and now are experiencing socio-economic benefits from rising forest products exports.

The effects of globalization of forest products trade were described in last year's *Review*. These include shifting manufacturing to lower labour cost countries and industry concentration for production and marketing economies. In addition to reduced transport costs mentioned above, economies of scale, free movement of capital, removal of trade barriers, improved information and communication technology and reduced transport drive market globalization. These effects can be either positive or negative, depending on who is looking at them and when.

GRAPH 1.2.1

Exports of primary-processed wood products in the UNECE region, 1997-2001



Note: Primary-processed wood products include sawnwood, panels, paper and paperboard, woodpulp and roundwood.
Source: UNECE/FAO TIMBER database, 2002.

Globalization of forest products trade encountered obstacles in 2002 in the form of tariffs and duties within the UNECE region. The former Canada – United States Softwood Lumber Agreement resurfaced in May 2002 when the United States placed 27% duties on sawn softwood imports from Canada. These duties are not new, and in the past they have resulted in higher sawnwood prices, and slowed growth of Canadian imports to the United States. In another sector, in retaliation to United States tariffs enacted against imported steel, the European Commission proposed to the World Trade Organization that it be permitted to take countermeasures, including a 15% tariff on paper and paperboard products from the United States. Whether in paper or sawnwood, the restriction of these important trade channels will either create new—or grow existing—alternative channels. This is illustrated by rising United States imports of European and southern hemisphere sawnwood.

Globalization of forest products trade, combined with greater environmental awareness and concern about tropical deforestation, has accelerated certification of sustainable forest management. The area of certified forests expanded rapidly in 2001 and in mid-2002 there were 124 million hectares worldwide, of which 90% are in the UNECE region. Half of the world's certified forests are in Europe and 41% in North America. While still small and undeveloped, the market for certified forest products is growing fast and is believed by the Timber Committee and the European Forestry Commission to be a good communication tool to ensure buyers of the

environmental advantages of purchasing and using wood products.

The Timber Committee discussed the downturn in wood markets at their October 2001 annual market discussions. In view of the negative market development the Committee stated that it is "imperative to develop new products to expand existing markets and to establish new markets to meet consumers' needs. The Committee reasserted the importance for the forest products industry to work internationally to promote the environmental advantages of the sustainable production of wood. The Committee discussed the need to increase the wood culture in the UNECE region. Delegates mentioned ongoing national and subregional campaigns to promote the use of wood. The Committee suggested coordinating efforts in order to achieve greater success."

The theme of the Timber Committee Market Discussions in September 2002 is the market effects of wood promotion.

The Timber Committee's market forecasts for 2002 were tempered by the economic calamities following the 11 September 2001 terrorist attacks in the United States. Forecasts were exceptionally conservative; however, overall a slight upturn was forecast for 2002. Based on signs in early and mid-2002, the Committee's forecast appears accurate in some market sectors. But considerable uncertainty exists in mid-2002 as the dollar sank below the euro in value for the first time since February 2000 and stock markets in North America and Europe shed considerable value. This uncertainty in mid-2002 will undoubtedly make for lively discussions at this year's Timber Committee Market Discussions.

Chapter 2
2001 recession in market economies, healthy growth in transition countries: against the odds, United States housing boom continues

Economic factors affecting forest products market in 2001 and early 2002

Highlights

- The growth of the global economy slowed in 2001, to 2.5%, exacerbated by the terrorist attacks of 11 September 2001 in the United States.
- The three major economies – United States, Japan, Germany – turned down simultaneously and entered into recession in the second half of 2001.
- Despite the global economic slowdown, the economies of nearly all transition countries grew in 2001 with an aggregate growth rate of around 5% in 2001, making this one of the fastest growing regions in the world.
- Russia and the other CIS countries showed particularly strong growth for the third consecutive year.
- Economic growth in the United States is expected to recover in the course of 2002, leading to a more general recovery, however, mid-2002 developments further underscore the fragility of growth forecasts.
- The United States housing boom continued in 2001 and into 2002, despite the economic recession.
- In Europe, construction stagnated in 2001 and minimal growth is expected in 2002. The largest construction sector in the region, Germany, is going through a deep crisis.

2.1 General economic developments

The analysis below is taken from the *Economic Survey of Europe*[1]. The full text of the *Survey* is available from the UNECE website[2]. The second part of this chapter focuses on construction developments.

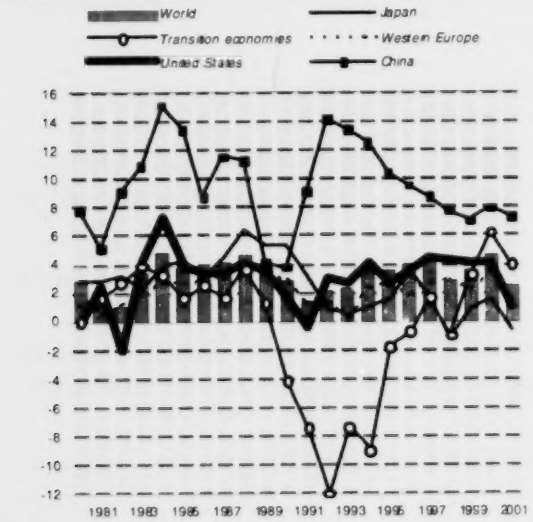
2.1.1 *UNECE region overview*

There was a progressive slowdown in the rate of expansion of the global economy in the course of 2001, and a parallel deterioration of the short-term outlook. World output is estimated to have increased by some 2.5 per cent in 2001 compared with a rise of 4.7 per cent in 2000, and the volume of world merchandise trade stagnated. The dominant feature was the synchronous cyclical downturn – the first since 1974-1975 – in the three major economies, the United States, Japan and Germany, which ended in recession. For the industrialized countries as a whole, real GDP increased by only 1 per cent in 2001, down from 3.7 per cent in 2000, the most rapid deceleration in real GDP since 1973-1974 (graph 2.1.1).

GRAPH 2.1.1

Annual changes in real GDP in the world economies, 1980-2001

(Percentage change over preceding year)



Note: Net material product (NMP) for the former centrally planned economies for the period 1980-1990.

Sources: IMF; Eurostat; and national statistics, 2002.

In the UNECE region, real GDP rose by only 1.7 per cent in 2001, against 4.2 per cent in 2000. This considerable slowdown masks, however, a striking resilience of the transition countries to the deterioration in the external economic environment. In eastern Europe, real GDP rose on average by 3.2 per cent in 2001. In Russia, the economic boom lost some momentum, but the annual increase in real GDP still amounted to 5 per cent, down from 9 per cent in 2000. The strength of the Russian economy was a major factor behind the overall buoyancy of economic activity in the CIS.

Global economic developments were overshadowed by the terrorist attacks in the United States on 11 September 2001. The general effect of the attacks has been to worsen the economic outlook, at least in the short term. However, their generally depressing impact on consumer and business confidence throughout the world economy appears to have waned in early 2002.

There is a broad consensus among forecasters that economic growth in the United States will recover in the course of 2002, and that in its wake the rate of growth in the rest of the world will strengthen as well. The short-term economic outlook, however, is still highly uncertain, not least because of the persistence of the very large domestic and external imbalances in the United States economy, which pose a major risk to a sustained cyclical recovery.

2.1.2 *Recent trends in western Europe and North America*

The pronounced global downswing reflects a number of factors, the cumulative effect of which increasingly dampened the rate of expansion. A major factor was the abrupt end to the economic expansion, especially the investment boom in information and communication technology (ICT) products, in the United States in the second half of 2000. The United States economy had been the main engine of global economic growth in the second half of the 1990s and when that engine failed, neither western Europe nor Japan were in a position to offset this adverse demand shock.

This demand shock followed on the heels of a significant supply shock, namely, the sharp rise in energy prices in 1999 and 2000 and was only reversed in the second half of 2001. Prices in

[1] *Economic Survey of Europe*, Number 1, 2002. Economic Analysis Division, UNECE, Geneva, Switzerland.

[2] www.unece.org/ead/ead_h.htm

international equity markets fell strongly in the immediate aftermath of the terrorist attacks of 11 September in the United States. From October, however, equity prices started to rise again as it became apparent that the economic fallout from the attacks would be more limited than originally feared and as expectations about short-term economic prospects became more positive. The fall in share prices led to considerable falls in household financial wealth and this is likely to have contributed to the slowing growth of household expenditures in the industrialized countries in 2001. In early 2002 global equity prices were being supported by expectations of an economic recovery in the United States and positive spillover effects in western Europe and other major regions.

With hindsight it has become clearer that the United States and global economies were already in a rather fragile state at the time of the terrorist attacks on 11 September. Short-term economic indicators released before the attacks were already pointing to a more protracted slowdown than had previously been expected by many forecasters. Against this background, the attacks were a profound psychological shock that not only increased fears about security but further eroded business and consumer confidence in their short-term prospects.

The pronounced cyclical downturn in the United States and other industrialized countries has had significant adverse effects on the economic performance of emerging markets and other developing countries. These effects were mainly transmitted via international trade. There was a sharp deceleration in the export growth of developing countries, reflecting the weakening demand for commodities and for ICT goods and services.

The positive economic performance of the euro area since 1999, especially until the first half of 2000, was accompanied by the continued depreciation of the euro *vis-à-vis* other major currencies, including the dollar, the yen and the pound sterling. The movement in the euro-dollar exchange rate has been particularly remarkable, due not only to euro weakness but also to dollar strength against other currencies. In February 2002, the euro had lost some 25 per cent of its value *vis-à-vis* the dollar since its launch. Since the changeover to euro notes and coins in early 2002, the euro has failed consistently to breach the 90 cents level against the dollar. The euro also weakened considerably *vis-à-vis* the yen during the first two years since its launch, by almost 30 per cent, before recouping some of the lost value in 2001. In February 2002, it had depreciated by just over 11 per cent against the yen compared with January 1999.

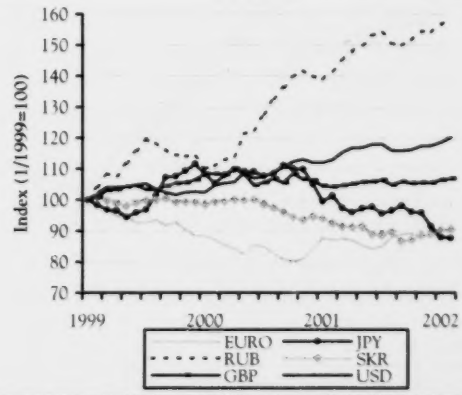
However, in spring and summer 2002, the dollar weakened against most other currencies, because of doubts about the short-term outlook of the United States economy (graphs 2.1.2 and 2.1.3). As a consequence, the euro-dollar rate was approaching parity in late June 2002. It is worth recalling that two major currencies for forest products markets, the pound sterling and the Swedish krona are not members of the euro zone.

The slowdown of the world economy in 2001 led to weaker demand in international commodity markets and a further pronounced decline of prices (graph 2.1.4). The fall in prices, however, appears to have bottomed out in the final months of 2001 and, for some commodities, was partly reversed. Prices for non-energy commodities in dollars in January 2002 were some 13 per cent below their level of a year earlier.

The spot price of crude oil (Brent crude) fluctuated around $26 per barrel during the first eight months of 2001, but fell sharply in the aftermath of 11 September and the more pessimistic assessment of short-term prospects for the world economy (graph 2.1.5).

GRAPH 2.1.2

Real effective exchange rates of selected currencies, 1999-2002

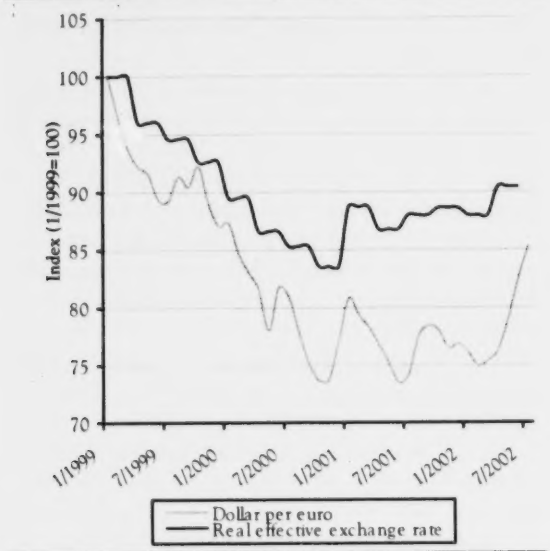


Note: JPY is Japanese yen, RUB is Russian rouble, SKR is Swedish krona, GBP is British pound sterling and USD is United States dollar. Deflators are IMF consumer price index-based.

Source: *International Financial Statistics*, IMF, 2002.

GRAPH 2.1.3

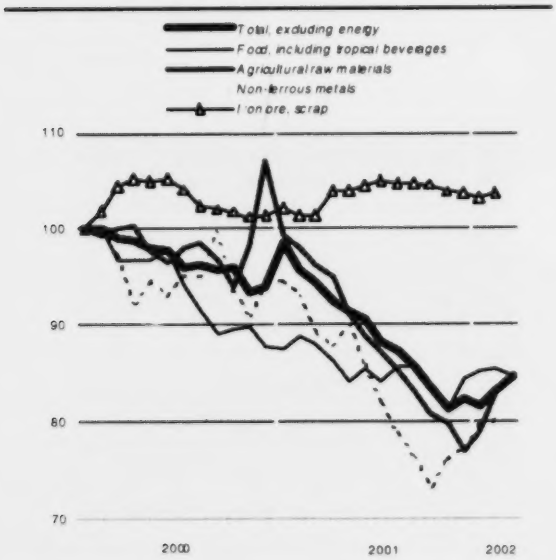
Exchange rate of the euro, January 1999-July 2002



Notes: Dollar per euro are average monthly rates. Real effective exchange rate are quarterly averages.
Source: European Central Bank, 2002.

GRAPH 2.1.4

World commodity prices, January 2000-February 2002
(Indices, January 2000=100)

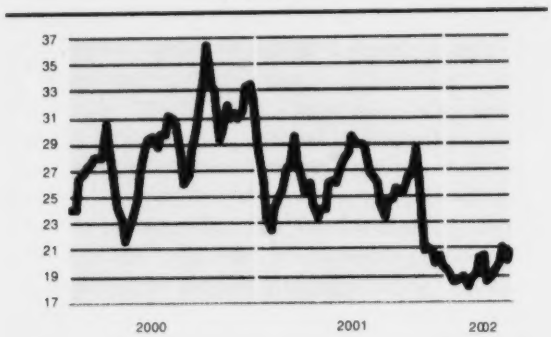


Note: Indices calculated on the basis of current dollar prices and weighted by commodity exports of the industrialized countries. Tropical beverages are coffee, tea and cocoa.

Source: Hamburg Institute for Economic Research, 2002.

GRAPH 2.1.5

Crude petroleum prices, January 2000-February 2002
(Dollars/barrel)



Note: Brent spot price, weekly averages.

Sources: United States Department of Energy, *Weekly Status Petroleum Report* (Washington, D.C.) various issues, 2002.

Since autumn 2001 oil prices have fluctuated within a range of $18-$21 a barrel, their lowest level since mid-1999 and below the target range of $22-$26 a barrel set by the Organization of Petroleum Exporting Countries (OPEC).

For the year as a whole, real GDP in the United States rose by 1.2 per cent, the weakest growth rate since 1991 (table 2.1.1). All of the average increase in real GDP in 2001 was due to the growth of personal and government consumption expenditures, although these were largely offset by falling investment and exports.

There was a marked slowdown in the rate of economic expansion in western Europe during 2001. For the year as a whole, real GDP rose by only 1.3 per cent, down from 3.5 per cent in 2000, and the smallest increase since 1993. This outcome partly reflects the slump in Turkey, where real GDP fell by more than 7 per cent in 2001, but in the European Union, real GDP rose by only 1.7 per cent in 2001, half the annual rate in 2000. Performance was broadly similar in the euro area.

Falling oil prices and weakening consumer demand contributed to a marked decline in rates of inflation in the second half of 2001.

The tendency for rapidly weakening growth was general. The year 2001 was thus a cyclical turning point for countries such as Finland, France, Ireland, the Netherlands, Portugal and Spain where an upswing had been sustained for a number of years. The falls in the average annual growth rates of real GDP were particularly sharp (some five percentage points) in Finland and Ireland.

The marked weakening in the overall growth rate in 2001 masks a severe recession in the

TABLE 2.1.1

Real GDP in the ECE market economies, 2000-2002
(Percentage change over previous year)

	2000	2001[e]	2002[f]
France	3.6	2.0	1.4
Germany	3.0	0.6	0.7
Italy	2.9	1.8	1.1
Austria	3.0	1.1	1.1
Belgium	4.0	1.3	1.1
Finland	5.6	0.7	1.3
Greece	3.8	4.1	3.2
Ireland	11.5	6.5	3.7
Luxembourg	7.5	4.0	3.0
Netherlands	3.5	1.5	1.1
Portugal	3.4	1.7	1.3
Spain	4.1	2.8	1.8
Euro area	3.4	1.6	1.2
United Kingdom	3.0	2.3	2.0
Denmark	3.0	1.3	1.4
Sweden	3.6	1.4	1.6
European Union	3.4	1.7	1.3
Cyprus	5.1	3.7	2.6
Iceland	3.6	1.1	2.4
Israel	6.4	-0.5	-
Malta	5.4	-0.3	-0.3
Norway	2.3	1.4	2.3
Switzerland	3.0	1.3	1.1
Turkey	7.2	-7.3	2.6
Western Europe	3.5	1.3	1.4
Canada	4.4	1.5	1.4
United States	4.1	1.2	1.6
North America	4.2	1.2	1.6
Japan	2.4	-0.5	-1.1
Total above	3.6	1.0	1.1
Memorandum items:			
4 major west European economies	3.1	1.6	1.2
Western Europe and North America	3.9	1.2	1.5

Note: e = estimate. f = forecast

Source: National statistics; OECD, *Economic Outlook*, No. 70 (Paris), December 2001; Consensus Economics, Inc., *Consensus Forecasts* (London), various issues, 2002.

manufacturing sector, where output fell throughout the year, leading to a pronounced decline in capacity utilization rates. In December 2001, manufacturing output was some 5.5 per cent lower than 12 months earlier.

Among the three major economies of the euro area, in *France*, the long economic upswing that began five years ago petered out into a decline of real GDP by 0.1 per cent between the third and fourth quarters of 2001. One of the main factors behind this was the sharp slowdown in the rate of growth of private consumption expenditures against a background of bleaker labour market prospects and falling consumer confidence. There was also a slowdown in the growth of government consumption.

In Germany, the economy moved into recession in the second half of 2001. Private consumption, which at the beginning of the year had been stimulated by the reduction of income tax rates, fell in the second half of 2001. Falling employment contributed to a decline in real disposable incomes in the third quarter of 2001 and households' propensity to spend was dampened by pessimism about the short-term economic outlook. The deep crisis in the construction sector (see section 2.2) continued to subtract from overall economic growth. The continued decline in construction, underway since the final quarter of 1999, moderated somewhat in the last two quarters of 2001.

In *Italy*, economic growth was very uneven during 2001. Virtually all of the expansion was concentrated in the first quarter, when it was still being driven by fixed investment and stockbuilding. Economic activity broadly stagnated in the next two quarters, and in the final quarter real GDP fell by 0.2 per cent as a result of massive destocking.

Outside the euro area, real GDP in the *United Kingdom* rose by 2.3 per cent in 2001, significantly above the western European average but masking a steady slowdown in the course of 2001. As in 2000, buoyant private consumption was the main source of economic growth. Household spending was supported not only by the gains in income stemming from strong employment growth but also by the willingness of households to borrow, which was partly stimulated by rising house prices.

Outside the EU, *Turkey* suffered a deep financial crisis in 2001 after the February devaluation led to turmoil in the financial sector and a deep recession. All the major components of domestic demand fell considerably. Exports were the only support to domestic activity but they were unable to prevent GDP from falling by over 7 per cent (as compared with 2000).

2.1.3 *Trends in the transition economies*

Despite the negative repercussions of the global economic slowdown, 2001 turned out to be a relatively successful year for the UNECE transition economies. With the exception of the former Yugoslav Republic of Macedonia, all of them posted positive rates of GDP growth and in some of them they were higher than in 2000 (table 2.1.2). The transition economies' aggregate GDP increased by 5 per cent, making them one of the fastest growing regions in the world.

TABLE 2.1.2

Annual changes in real GDP in eastern Europe, the Baltic states and the CIS, 1999-2002

(Per cent)

	1999	2000	2001 April forecast	2001 Actual outcome	2002 official forecast
Eastern Europe	1.7	3.7	4.2	3.0	2.7
Albania	7.3	7.8	5-7	7*	7
Bosnia and Herzegovina [a]	..	9.1	7-9	8*	6
Bulgaria	2.4	5.8	5	4.9	4
Croatia	-0.4	3.7	3-4	4.3*	4
Czech Republic	-0.4	2.9	3	3.6	2.4-3.4
Hungary	4.2	5.2	4.5-5	3.8	3-4
Poland	4.1	4.0	4.5	1.1	1
Romania	-1.2	1.8	4.1	5.3	4.5
Slovakia	1.9	2.2	3.2	3.3	3.6
Slovenia	5.2	4.6	4.5	3.0	2.9-3.6
The former Yugoslav Republic of Macedonia	4.3	4.6	6	-4.6	4
Yugoslavia [b]	-17.7	6.4	5	6.2	4
Baltic States	-1.7	5.4	4.7	6.2	4.2
Estonia	-0.7	6.9	6	5.3	3.5-4
Latvia	1.1	6.8	5-6	7.6	4.5-5.5
Lithuania	-3.9	3.9	3.7	5.7	4
CIS	4.5	8.3	4.2	6.2	4.8
Armenia	3.3	6.0	6.5	9.6	6
Azerbaijan	7.4	11.1	8.5	9.9	8.5
Belarus	3.4	5.8	3-4	4.1	4-5
Georgia	3.0	2.0	3-4	4.5	3.5
Kazakhstan	2.7	9.8	4	13.2	7
Kyrgyzstan	3.7	5.4	5	5.3	4.5
Republic of Moldova [c]	-3.4	2.1	5	6.1	6
Russian Federation	5.4	9.0	4	5.0	4.3
Tajikistan	3.7	8.3	6.7	10.2	8
Turkmenistan [d]	17.0	17.6	16	20.5	18
Ukraine	-0.2	5.9	3-4	9.1	6
Uzbekistan	4.4	4.0	4.4	4.5	5.1
Total above	3.3	6.5	4.2	5.0	4.0
Memorandum items:					
CETE-5	3.0	3.8	4.1	2.3	2.1
SETE-7	-1.7	3.5	4.5	4.9*	4.4

Note: Aggregates are UNECE secretariat calculations, using PPPs obtained from the 1996 European Comparison Programme. Forecasts are those of national conjunctural institutes or government forecasts associated with the central budget formulation. Aggregates shown are: eastern Europe (the 12 countries below that line), with sub-aggregates CETE-5 (central European transition economies: Czech Republic, Hungary, Poland, Slovakia, Slovenia) and SETE-7 (south-east European transition economies: Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Romania, The former Yugoslav Republic of Macedonia and Yugoslavia); Baltic states (Estonia, Latvia, Lithuania); and CIS (12 member countries of the Commonwealth of Independent States).

[a] Data reported by the Statistical Office of the Federation; these exclude the area of Republika Srpska.

[b] Data exclude Kosovo and Metohia.

[c] Excluding Transdniestria.

[d] Figures for Turkmenistan should be treated with caution. In particular, the deflation procedures that are used to compute officially reported growth rates are not well documented and the reliability of these figures is questionable.

Sources: National statistics, CIS Statistical Committee and direct communications from national statistical offices to UNECE secretariat.

The main factor behind this outcome was buoyant growth in the Commonwealth of Independent States, where a strong recovery continued for a third consecutive year.

As in 2000, Russia remained the principal engine of growth for the CIS countries in 2001, with a 5 per cent increase in GDP. After the 1998 financial crisis, the Government introduced sweeping policy reforms, which have led to major structural adjustments in the economy and have moved it on to a path of strong growth. Considerable progress has been made in strengthening the Russian fiscal and judiciary systems, in rehabilitating the banking sector and the payments system in general, and in reducing administrative interference in the economy. The exchange rate realignment after the August 1998 financial collapse – equivalent to a competitive, real devaluation – provided an important stimulus to local producers, encouraging import substitution on a large scale. In addition, from mid-1999 until the fall of 2001, the Russian economy benefited substantially from the surge in world oil prices. Between 1999 and 2001, Russia's GDP increased by almost 21 per cent, giving a much needed boost to popular support for the reforms. All the indications are that the Russian economy has crossed an important threshold in its systemic reforms, making the process of its transformation to a market economy now look irreversible.

Another important development in the CIS region has been the continuing strong recovery of two of the larger economies, Kazakhstan and Ukraine, both of which had some of the highest rates of GDP growth in 2001. In the case of energy exporting Kazakhstan, the recent record rates of growth (13.2 per cent in 2001 after 9.8 per cent in 2000) reflect both the impact of a favourable external environment and of balanced policies, which have helped to broaden the base of the recovery while maintaining macroeconomic stability. In Ukraine, strong domestic demand contributed to the 9.1 per cent GDP growth in 2001. The recent disinflation effort (which reduced the year-on-year inflation rate to single digits for the first time since independence), coupled with growing real incomes, has given a boost to consumer and investor confidence.

Although an important growth engine for the neighbouring CIS countries, Russia was not in fact the fastest growing economy in the region. Of the remaining 11 CIS member States, in 2001, 8 had annual rates of GDP growth higher than that of Russia. In most cases (Armenia, Kazakhstan,

Central European transition countries specialize in wood industries

The *Economic Survey of Europe 2002* (section 3.4 iii) analyses the changing patterns of manufacturing employment between 1993 and 2000 in four leading transition countries, Czech Republic, Hungary, Poland and Slovakia, and in particular these economies' specialization by branch. It emerges from the analysis that wood and wood products is one manufacturing sector where these countries, except Slovakia, are specialized and where employment has increased, despite the general falling trend. For the four countries, employment in wood and wood products industry has risen by nearly 11%, while total manufacturing employment has fallen by just over 10%. They are more specialized (especially Poland) in wood and wood products, relative to the European Union average pattern. The share of this sector in manufacturing employment in the four countries is nearly double the corresponding share for the European Union.

Share of wood and wood products in total manufacturing employment

(%)

	1993	2000
Czech Republic	2.5	3.0
Hungary	2.4	3.0
Poland	4.3	5.5
Slovakia	3.1	2.7
Four countries above	3.5	4.4
European Union (15)	2.1	2.4

Source: *Economic Survey of Europe*, 2002.

Republic of Moldova, Turkmenistan, Ukraine and partly Tajikistan), strong growth was underpinned by the expansion of exports. Commodity exporters benefited from favourable external market conditions while others were able to take advantage of rising import demand within the CIS itself. However, the surge in economic activity was mostly confined to the first half of 2001; in the second half of the year, there was a notable deceleration both in output and export performance throughout the CIS.

In 2001, strong rates of growth prevailed in most of the eastern European and Baltic States as well. In Croatia, the Czech Republic, Romania, Slovakia, Latvia and Lithuania, the rate of GDP growth not only accelerated from 2000 but was also above expectations at the start of the year. Economic activity remained high and in line with expectations in Albania, Bosnia and Herzegovina, Bulgaria and Estonia. In contrast, growth decelerated in Hungary and, especially, in Slovenia; in these two economies the effects of weakening western European import demand were probably most pronounced. Nevertheless, in both countries the annual rates of GDP growth were considerably higher than the western European average.

Two economies, Poland and the former Yugoslav Republic of Macedonia, have recently encountered serious economic difficulties. After nine years of uninterrupted and rapid expansion, the Polish economy came to a near standstill in 2001. The reasons for this are complex and deep-seated but they are indicative of the continuing fragility of the transition economies and the fact that even the more advanced reform countries are prone to unexpected setbacks.

In view of the increasing openness of the transition economies and given the considerable weakening of global trade in 2001, their relatively strong performance in 2001 comes as a surprise. It is therefore instructive to seek reasons for their greater resilience in 2001 than in the mid-1990s to similar shocks:

- First of all, thanks to the successful implementation of reforms which have bolstered consumer and investor confidence, domestic demand in the transition economies has generally been growing steadily in recent years. The recent global downturn has affected domestic demand (both private consumption and investment) in these economies to a lesser extent than in most of the industrialized countries. This relatively robust domestic demand helped to cushion the transition

economies from the effects of the deteriorating external environment.

- Secondly, thanks to recent productivity gains, most eastern European transition economies have been able to improve their cost competitiveness *vis-à-vis* their main trading partners. Owing to the fact that the productivity differential *vis-à-vis* western Europe was apparently retained in 2001, the transition economies held on to these gains or even enlarged them. The ongoing improvement in their competitive position obviously helped eastern European exporters to perform better on western European markets in 2001 than some of their competitors.

2.1.4 The current outlook

In the spring of 2002, there were increasing signs that the pronounced cyclical downturn of 2001 has started to bottom out. The short-run outlook, however, remains very uncertain and the prospects are for only a gradually strengthening recovery in 2002.

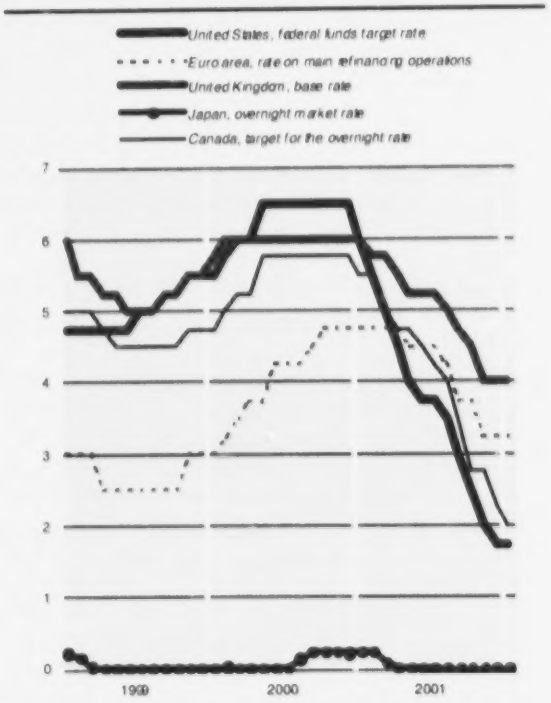
In the United States, economic conditions showed signs of improving in early 2002. The sustained fall in industrial activity since the beginning of 2001 petered out into a small increase in output in the first two months of 2002.

The consensus of forecasters is now for an annual increase in real GDP in the United States of about 1.5 per cent in 2002. This annual average masks expectations of a somewhat more pronounced strengthening of growth in the second half of 2002. These, in combination with a meagre growth of profits, will continue to depress business fixed investment which, for the year as a whole, is expected to be less than in 2001. Domestic demand will be supported by the considerable monetary stimulus which is already in the pipeline, although this has not fed through to interest rates at the longer end of the maturity spectrum and banks have tightened borrowing conditions (graph 2.1.6) Unfolding developments in summer of 2002, such as business collapses due to accounting problems and the decline of the dollar further underscore the fragility of growth forecasts.

In western Europe as a whole, real GDP is forecast to increase by 1.4% in 2002, largely a reflection of weak domestic demand and the external environment. In the Euro area, the fall in real GDP in the final quarter of 2001 is generally expected to be followed by a small increase in economic activity in the first quarter of 2002. The

GRAPH 2.1.6

Changes in key official interest rates in the major industrialized countries, January 1999-February 2002
(Per cent per annum)



Sources: European Central Bank, Bank of England, United States Federal Reserve Board, OECD, *Main Economic Indicators* (several issues); and Bank of Canada, 2002.

confidence of consumers, industrial managers and producers of services has improved somewhat in the first two months of 2002. In line with the expected profile of the United States recovery, economic activity is expected to strengthen in the second half of the year.

Economic growth in Germany, the largest economy of western Europe, was only 0.6 per cent in 2001, the smallest increase since 1993. Little improvement is expected in 2002, with the annual growth rate forecast at about 0.75 per cent. The general government deficit rose to 2.7 per cent of GDP in 2001, close to the 3 per cent ceiling established in the Stability and Growth Pact. This narrowly circumscribes any scope for discretionary fiscal measures designed to support economic growth.

Among the other member countries of the euro area, economic growth in France is expected to hold up somewhat better than in Germany and

Italy, partly because of a more expansionary fiscal policy. Other national growth rates in 2002 are forecast to range from 1.1 per cent in Austria, Belgium and the Netherlands to some 3.75 per cent in Ireland.

Outside the euro area, in the United Kingdom, a relatively moderate slowdown in the rate of economic growth to 2 per cent is forecast for 2002 (down from 2.3 per cent in 2001). This mainly reflects continued vigorous growth in private household consumption and a large increase in public sector spending. Moreover, there are increasing concerns about the sustainability of the recent surge in private household debt, which is at record levels relative to income.

It is generally expected that growth will moderate somewhat in the transition economies in 2002: according to the available official forecasts, aggregate GDP in the CIS will grow by close to 5 per cent, in the Baltic States by slightly more than 4 per cent and in eastern Europe by some 2.75 per cent. The average figures for the subregions are very much dominated by the expected developments in two of the largest economies in the region: Russia and Poland. In Russia, the 2002 budget assumes a 4.3 per cent rate of GDP growth. It should be noted, though, that the Russian Ministry of Economic Development drafted three possible growth scenarios for 2002, depending on the expected development of world oil prices, and the one that underlies the 2002 budget corresponds to the "optimistic" scenario in this set.

In Poland, after prolonged consultations and policy debates, a revised 2002 budget reflecting the Government's anti-crisis programme was finally voted in March. The budget contains a number of austerity measures. This adjustment is expected to have a negative impact on economic activity: the rate of GDP growth in 2002 incorporated in the budgetary framework is just 1 per cent, similar to the outcome in 2001.

In the rest of eastern Europe, the Governments of Bulgaria, Croatia, the Czech Republic, Hungary, Romania and Yugoslavia envisaged some deceleration of growth in 2002 as compared with 2001. The most frequently quoted reason for this expected slowdown are the lagged effects of the global and western European slowdown. Nevertheless, the annual rates of GDP growth in most of these countries are expected to remain in the range of 3 to 4 per cent. In contrast, according to official forecasts, GDP growth in Slovakia is expected to accelerate in 2002, consolidating the adjustment effort undertaken in 1999-2000, while the former Yugoslav Republic of Macedonia envisages a return to growth after the 2001 downturn.

After two years of robust economic growth, some slowdown is expected in the Baltic States in 2002. The deceleration is likely to be more pronounced (with GDP growing by some 4 per cent or even less) in Estonia and Lithuania, both of which are rather dependent on external factors (a very high degree of openness in the case of Estonia and a strong reliance on oil processing and exports of refined products in the case of Lithuania). In Latvia, where strong GDP growth in 2001 was mainly underpinned by buoyant domestic demand, aggregate output is likely to continue to grow at a high rate (around 5 per cent) in 2002.

Despite a certain slowdown, the CIS is likely to remain the fastest growing subregion within the UNECE area in 2002. According to official forecasts, Ukraine's GDP is expected to grow by 6 per cent in 2002, although some private forecasters are less optimistic. In February, Kazakhstan's parliament approved a medium-term economic programme, which envisages GDP growing at an average annual rate of some 5 to 7 per cent in 2002-2004. In Georgia the budget projections envisage growth of 3.5 per cent in 2002, although the Ministry of Economy, Industry and Trade is more optimistic and expects it to be in the range of 4.9 to 7.1 per cent. In the majority of the other CIS countries, Governments are expecting GDP growth rates in the range of 5 to 8 per cent in 2002.

2.2 Construction sector developments[1]

This section presents short-term trends in construction in Europe and North America. Where information is available, the section focuses on new residential construction, plus the repair and remodelling market, because these sectors use the most wood.

[1] This construction section was written by Dr. Al Schuler, Research Economist, Northeast Forest Experiment Station, USDA Forest Service, 241 Mercer Springs Road, Princeton, West Virginia, United States 24740, telephone +1 304 431 2727, fax +1 304 431 2772, e-mail: aschuler@fs.fed.us and Mr. Craig Adair, Director, Market Research, APA-The Engineered Wood Association, P.O. Box 11700, Tacoma, Washington, United States 98411-0700, telephone +1 253 565 7265, fax +1 253 565 6600, e-mail: craig.adair@apawood.org

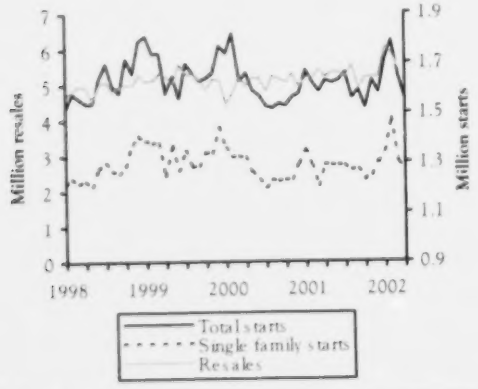
2.2.1 North American residential construction

2.2.1.1 United States residential construction

The United States housing boom that began following the recession in the early 1990s, continued in 2001 (although there was a dip following terrorist attacks of 11 September 2001), despite the economic recession that plagued the rest of the economy (graph 2.2.1). Booming housing and mortgage activity (refinancing and new purchases) have been instrumental in cushioning the severity of the just ended recession. During 2001, housing (new housing and remodelling) was a direct beneficiary of 10 Federal Reserve Board rate cuts. Housing plays a major role in the United States economy, historically accounting for approximately 20% of real GDP growth (40% in 2001) when the following are included: new homebuilding, remodelling, purchases of home furnishings, and home services such as gas and electricity. In addition, there is the wealth effect from changing house prices that affects consumer spending, and property tax revenue for local governments. The saying – "as goes housing, so goes the economy" is particularly true this year.

GRAPH 2.2.1

United States residential markets, 1998-2002



Sources: National Association of Realtors (resales) and United States Bureau of Census (starts), 2002.

Although housing did well in 2001, the rest of the construction sector did not fare as well. The reason is that the recession was caused primarily by a sharp pull back in business investment, including non-residential building construction. In fact, nonresidential building construction was off 4% in real dollars during 2001. The only reason the real value of total construction did not fall for the first time in 10 years, was due to the stellar performance of the residential sector and some help from public construction (table 2.2.1).

Table 2.2.1

Value of United States construction, 2000-2001

	(billion 1996$)		
	2000	2001	Change (%)
Total construction	707	723	2
Private building construction	555	559	1
Residential [1]	321	330	2
Non-residential	**180**	**173**	**-4**
Private, other [2]	20	23	12
Public construction [3]	152	164	8

Note: [1]Includes improvements. [2]Non building construction. [3]Public funding sources.

Source: United States Department of Commerce, Bureau of the Census, *Annual Value of Construction Put in Place*, Report C30, 2002.

2.2.1.2 United States residential construction in 2002 and beyond

Housing markets have held up better than expected through June of 2002, thanks in part to an exceptionally mild winter, attractive interest rates, and resilient consumer confidence, as the recession's impact on jobs was modest. However, because housing activity never really slowed down during the recession, there is little "pent up demand" in the system, and therefore, residential activity is not expected to play the traditional role of leading the economy forward through the remainder of 2002. Therefore, most analysts expect housing to pull back modestly in the second quarter, pick up some in the final six months and finish the year with total starts about the same as the 1.6 million level in 2001. Looking further out, most analysts expect 2003 demand to be similar to 2002; however, if recent trends with the weakening United States dollar continue, interest rates will rise, thereby negatively affecting housing affordability (table 2.2.2). The fall in the dollar has been expected for some time, and the concern is that if it falls too far too fast, this could fan inflation and slow the

Table 2.2.2

United States housing outlook, 2002-2003

(Million starts)

	2002	2003
APA	1.60	1.65
NAHB	1.63	1.59
RISI	1.68	1.68
NABE	1.63	1.60
NAR	1.62	1.56
Average	1.63	1.63

Sources: NAR – National Association of Realtors, May, 2002; NAHB – National Association of Homebuilders May, 2002; NABE - National Association of Business Economists May, 2002; RISI – Resource Information Systems, Inc. May, 2002: APA – the Engineered Wood Association, Report E68, April, 2002.

current economic recovery, thereby further affecting all construction activity.

Non-residential comprises three components (each of which has a public and private sector): building construction, non-building construction, and repair and remodelling. The sector that uses the most wood is building construction. Through the first quarter of 2002, private, non-residential building construction was down 18%, with most of the weakness in industrial and office construction although there was some strength in the education sector. Public sector construction (including non building), in contrast, was up 16% in the first quarter, with public housing, industrial, educational, and hospital construction leading the way. Most analysts expect private, non-residential building construction activity to remain subdued; at least until the manufacturing sector rebounds late in 2002. The Engineered Wood Association's (APA) forecast for non-residential building construction calls for a 3.4% decline in 2002, but rebounding in 2003 and later years (graph 2.2.2). Non-building construction includes bridges, highways, and sewer projects. This segment increased 4.2% in 2001, but is expected to cycle down in 2002 and 2003 before rebounding in 2004 (APA, Report E68).

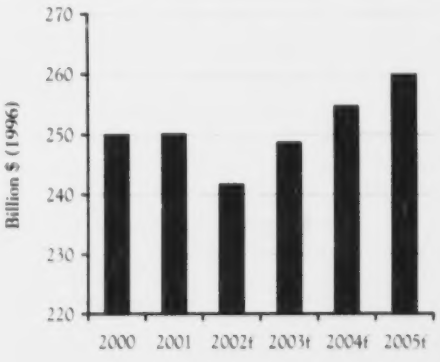
2.2.1.3 Canadian construction market

The Canadian economy fared better than the United States in 2001, and their housing industry reflected this difference. Canada, as a North American Free Trade Agreement partner, is heavily tied to the United States market, shipping over 80% of its exports to the United States, accounting for one-third of Canada's GDP. Canadian starts have improved steadily the past several years, growing from 137,000 in 1998 to 163,000 in 2001, a 20% increase. In 2001, starts were up 7.3% and through April 2002, they are up 22% over the first four months of last year.

Canadian housing activity is expected to remain buoyant through the rest of 2002, with total residential construction investment (new housing plus remodelling/renovation) projected to increase 6.8% (Toronto Dominion Bank, *Quarterly Economic Forecast*). However, activity in the non-residential construction sector is not as strong with business investment in non-residential structures up less than 1% in 2001 as weakness began in the second quarter of the year. Non-residential weakness continued in 2002, as the value of non-residential permits fell 5.9% in the first quarter of 2002, the fourth consecutive quarterly decline. The rebound in manufacturing (which was not hit as hard as its United States counterpart) is expected to begin late in the second half of 2002 and strengthening through 2003. This should compensate for an expected modest slowdown in the residential sector in 2003 as higher interest rates accompany a strengthening economy.

GRAPH 2.2.2

Non-residential building construction in the United States, public and private combined, 2000-2005



Source: APA – the Engineered Wood Association, *Regional Production and Market Outlook (for structural panels and engineered wood products)*, Report E68, 2002.

2.2.2 *European construction developments*

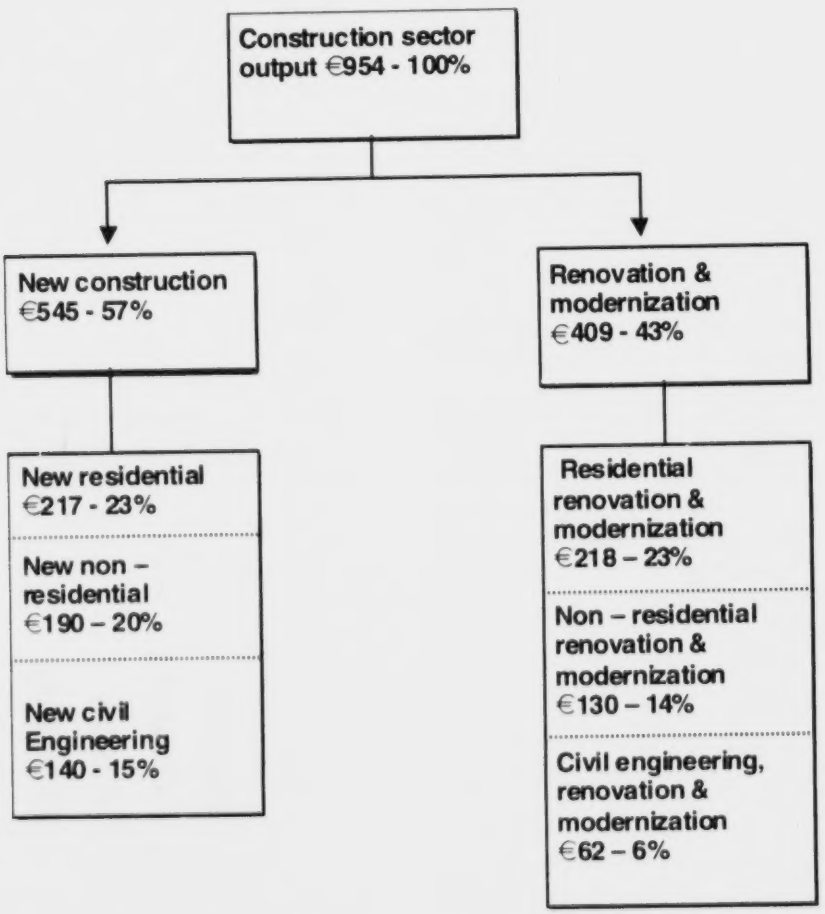
2.2.2.1 *Total construction*

The total value of the construction sector output (excluding expenditures for services, and the do-it-yourself (DIY) market) in all 19 Euroconstruct countries[4] reached 954 billion euros in the year 2001(figure 2.2.1). By 2004, it is projected to increase to 991.2 billion (2001 prices), and should exceed 1,000 billion euros by 2004 in current prices. New construction contributed 57% while the remainder was used for renovation and modernization. In the residential sector, new and renovation and modernization have similar shares, while the other two sectors show mostly new work and less renovation and modernization.

FIGURE 2.2.1

Construction sector in Europe, 2001

(Billion euro)


Construction sector output €954 - 100%
New construction €545 - 57%
Renovation & modernization €409 - 43%
New residential €217 - 23%
New non – residential €190 – 20%
New civil Engineering €140 - 15%
Residential renovation & modernization €218 – 23%
Non – residential renovation & modernization €130 – 14%
Civil engineering, renovation & modernization €62 – 6%

Source: Euroconstruct, *Executive Summary: European Construction Market Outlook*, June 2002.

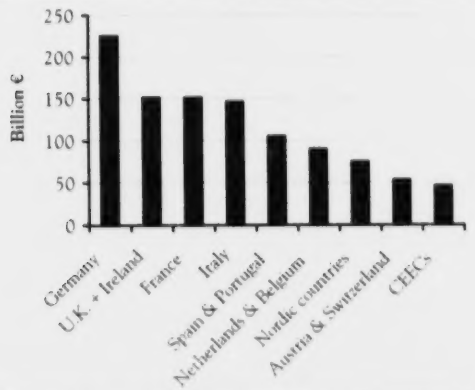
[4]Euroconstruct's 19 countries: Austria, Belgium, Denmark, Czech Republic, Finland, France, Germany, Hungary, Ireland, Italy, Netherlands, Norway, Poland, Portugal, Slovakia, Spain, Sweden, Switzerland, and the United Kingdom. Note Euroconstruct's 15 western European countries are not the EU15.Note that Euroconstruct's analysis of central and eastern European construction is based on 4 countries.

Combining new and renovation work, residential construction is by far, the largest sector, accounting for 46% of the total, with non-residential share at 33% and civil engineering the smallest at 21%. For 2002, the most recent available estimate from Euroconstruct experts (June 2002) is for near stagnation overall (0.5% growth). The 11 September 2001 terrorist attacks in the United States had a particularly negative impact on global consumer confidence, delaying private investment spending on residential and non-residential construction projects. Euroconstruct expects a gradual improvement in private sentiment in the Euroconstruct region beginning in the second half of 2002, and this will be reflected in higher spending in the construction sector.

Europe's construction industry is dominated by Germany, which accounts for over 22% of the western European market. It is followed in importance by the United Kingdom, France and Italy (graph 2.2.3). In Germany construction investments supported economic activity in the first half of the 1990s, but since then they have weakened considerably and actually dampened overall economic growth.

GRAPH 2.2.3

Total construction output in Euroconstruct countries, 2000



Note: CEECs include Czech Republic, Hungary, Poland and Slovakia. Nordic Countries include Denmark, Finland, Norway and Sweden.

Sources: Euroconstruct, *Executive Summary to the European Total Construction Market Outlook, 2002.*

There are expectations that a trough may have been reached in 2001 – but this remains to be seen. In 2001, there was a sharp fall in both residential investment and non-residential business construction investment compared with preceding year. Public sector construction investment fell (with the exception of 1999) for the ninth consecutive year in 2001. The decline in construction investment continued to be above average in eastern Germany and affected all major construction sectors (residential, non-residential private and public sector investment).

Residential investment in eastern and western Germany since the second half of the 1990s has been depressed by excess capacities (and related deteriorating expectations for rates of returns) for multi-family buildings. Also the phasing out (or lowering) of generous fiscal incentives (such as less favourable depreciation allowances) in the second half of the 1990s affected rates of return. Excess capacities, moreover, increased the risk of not being able to actually rent the additional capacity and this also dampened investment activity. In contrast, demand for single-family houses continued in general to support economic activity.

Public sector investment since the second half of the 1990s was restrained by the normalization of activity levels in east Germany (following the heavy front-loading of infrastructure investment in the immediate wake of unification) and tight government budgets given the need to meet the Maastricht fiscal convergence criteria. (Public investment is a discretionary expenditure item and it is therefore often the main victim of fiscal consolidation efforts.)

Business sector (non-residential) investment in western Germany since the second half of the 1990s was influenced by the varying strength of the business cycle. There were also indications of overcapacities, which limited new construction activity.

In eastern Germany, generous fiscal incentives entailed significant excess capacities notably for office space and retail sales space. The curbing of these incentives has depressed demand, but there still remain sizeable idle capacities.

2.2.2.2 Outlook for total European construction

According to the latest Euroconstruct summary and forecasts (Euroconstruct, Dublin June 2002), after growth of 3.6% in 1999, growth slowed in 2000 to 2.8%, and then stagnation set in with no growth in 2001, and minimal growth (0.5%) expected in 2002. Growth is expected to approach 2% per year during 2003 and 2004 (table 2.2.3). According to Euroconstruct, "the structural differences between the four central and eastern European countries and the mature economies of

most of the western European countries are very clearly reflected in the composition of construction output". Central and eastern European construction is overwhelmingly dominated by new non-residential construction and civil engineering, while in the western economies, repair and maintenance is increasing share significantly (table 2.2.3). Growth in construction output is expected to be substantially higher in central Europe than in western Europe. Total value of construction for central and eastern Europe is forecast by Euroconstruct to expand by almost 10% over the four years to 2004 compared with a more modest 4% expansion for western Europe. This differential growth pattern is due in part to the different construction mix with many of the civil engineering and some non-residential investments being funded from the public sector, which is less affected by the events of the 11 September terrorist attacks.

The outlook for different types of construction activity is also mixed. Civil engineering (both in western Europe and the central and eastern European countries) is the most resilient sector, and is expected to grow about 3% per annum over the period. In contrast, growth in new residential construction will moderate while modernization and renovation activity are expected to remain healthy. New non-residential activity is also expected to remain subdued over most of the forecast period.

Looking at housing construction market growth by individual countries (table 2.2.4), we see that the United Kingdom is the only major western European country expected to enjoy consistently good growth over the forecast period from 2001 to 2004. A major boom in house prices (new and existing) is under way in the United Kingdom to levels which may not be sustainable. Germany and France are not expected to attain solid growth until 2004. In contrast, the central and eastern European countries are all expected to experience robust growth over the next few years. As mentioned previously, this is a reflection of higher spending on civil engineering in this part of Europe.

2.2.2.3 *Residential construction*

As presented at the Euroconstruct conference in June 2002, there are significant differences in residential construction activity across the Euroconstruct partner countries. Germany is currently experiencing a major recession in this sector; while Ireland, Spain, and Portugal return to normal; Sweden is rebounding after a collapse; France and Italy maintain good growth; and the United Kingdom remains at a historically low level.

TABLE 2.2.3

Construction trends by market segment, 2000-2004

(Annual growth rate in %, at 2000 constant prices)

	2000	2001[e]	2002[f]	2003[f]	2004[f]
15 western European countries					
New residential	2.1	-4.2	-2.0	-0.4	1.0
Residential renovation and modernization	2.7	1.1	2.3	2.3	2.3
New Non – residential	2.7	1.7	-0.7	0	1.1
Non – Res. renovation and modernization	3.6	2.4	1.8	2.2	2.0
Civil engineering	2.6	2.6	2.9	4.1	2.4
Total construction	**2.9**	**0.2**	**0.6**	**1.4**	**1.6**
4 Central and eastern European countries					
New residential	8.3	-3.8	-5.3	2.5	7.4
Residential renovation and modernization	1.9	-0.9	3.5	7.4	6.7
New non-residential	-3.4	0.7	-3.7	1.9	6.1
Non-residential renovation and modernization	-1.7	-2.7	-3.9	1.8	3.3
Civil engineering	5.0	-0.9	0.8	8.9	11.9
Total construction	**1.5**	**-2.4**	**-1.8**	**4.3**	**7.4**

Note: e = estimate, f = forecast by Euroconstruct. 15 western European countries are not EU 15. The 4 central and eastern European countries are the Czech Republic, Hungary, Poland and Slovakia

Source: Euroconstruct, 2002.

TABLE 2.2.4

Single family housing outlook, 2000-2004

(Annual growth rate in % at 2000 constant prices)

	2000	2001	2002f	2003f	2004f
Austria	1.29	-2.98	-1.06	1.57	1.48
Belgium	5.50	-4.04	-2.20	3.91	4.31
Denmark	3.90	-2.57	1.02	3.00	2.55
Finland	7.48	-1.01	-1.02	1.04	4.04
France	7.02	1.69	0.60	0.93	1.81
Germany	-2.54	-5.76	-2.13	0.16	1.67
Ireland	6.14	2.81	-0.95	-0.14	0.86
Italy	5.56	3.99	2.27	1.28	0.57
Netherlands	3.35	0.62	-0.61	1.27	1.63
Norway	4.23	-1.00	0.31	1.94	1.11
Portugal	6.30	2.58	1.20	2.17	-1.53
Spain	6.50	5.51	3.50	2.18	1.56
Sweden	2.31	0.55	2.51	5.75	3.62
Switzerland	1.52	1.27	-0.44	1.39	2.08
United Kingdom	1.48	3.43	2.84	2.44	1.95
Western Europe (EC - 15)	2.93	0.21	0.66	1.43	1.61
Czech Republic	4.71	9.54	5.14	5.36	5.40
Hungary	4.64	7.67	8.69	10.62	9.78
Poland	1.01	-7.76	-6.75	2.18	7.51
Slovak Republic	3.76	1.24	0.08	2.12	2.56
Central and eastern Europe (EC - 4)	2.24	-2.40	-1.83	4.38	7.44
Euroconstruct countries (EC - 19)	2.80	0.10	0.50	1.50	1.90

Source: Euroconstruct, Dublin, June 2002.

Housing accounts for a large share of construction activity, approaching 435 billion euros in the 19-country Euroconstruct zone. Western European housing accounts for almost 50% of construction company turnover while the comparable amount is much lower in eastern Europe (25%) due to heavier emphasis on non-residential and civil engineering. Currently, the existing housing stock is approaching 200 million units, and this bodes well for future renovation, maintenance and improvement activity. In fact, as Europe's low fertility rates negatively impact demand for new housing, the aging housing stock will means renovation and modernization expenditures will, for the first time, exceed new housing investment. (Interestingly, similar trends are happening in North America, however, R&M won't exceed new housing investment until the end of the decade) There are also significant regional differences or factors influencing new residential construction activity in Europe. In the West, the aging population will continue to reduce demand, while in the central and eastern European countries, demand for new housing is 2 to 3 times supply, and this will support strong new house construction activity for the rest of the decade.

The residential construction sector was understandably impacted by the 11 September terrorist attacks effect on the employment and income, both of which help to determine residential investment. Consequently, total European housing investment should stabilize in 2002, with negative growth of 0.2% following the 1.8% drop in 2001, but finally recovering to 1% plus growth during 2003 – 2004 (Table 2.2.5). Regionally, western Europe should stabilize in 2002 as Germany recovers, but continuing problems in Poland will hold back central and eastern Europe in 2002. Looking further out, western Europe's old age demographics will keep the recovery modest (although renovation and maintenance growth will partially compensate).

TABLE 2.2.5

Total residential construction, 2000-2004

(Real annual growth rates from previous year, %)

	2000	2001	2002[1]	2003[1]	2004[1]
Austria	-1.1	-6.0	-2.4	0.7	0.4
Belgium	6.3	-1.4	-	3.3	4.8
Denmark	6.2	-8.1	2.2	3.3	3.4
Finland	6.0	-6.0	0.0	4.0	6.0
France	6.6	-0.7	0.9	0.9	2.2
Germany	-2.7	-7.0	-2.2	-0.3	1.8
Ireland	7.0	0.9	1.3	-0.5	-0.7
Italy	6.5	4.7	2.0	1.2	0.4
Netherlands	1.0	-2.2	-1.9	1.3	2.5
Norway	9.6	2.4	-0.2	6.8	-1.8
Portugal	7.7	-2.0	-6.5	-8.5	-5.9
Spain	8.2	2.9	2.2	1.0	0.4
Sweden	0.9	11.0	0.8	3.7	3.5
Switzerland	-2.1	-0.9	-2.2	1.6	2.3
United Kingdom	2.5	-0.8	1.7	2.4	2.7
Western Europe (EC - 15)	2.7	-1.8	-0.1	0.8	1.5
Czech Republic	-1.9	2.7	6.1	6.7	7.4
Hungary	5.2	10.0	15.0	15.0	11.0
Poland	11.0	-7.3	-9.7	-1.0	4.8
Slovakia	18.0	-3.1	2.3	3.9	2.6
Central and eastern Europe (EC - 4)	8.6	-2.7	-2.0	4.3	6.8
Euroconstruct countries (EC - 19)	2.8	-1.8	-0.2	0.9	1.6

Source: Euroconstruct, June, 2002.

The 4 Euroconstruct central and eastern European countries should return to more solid growth.

Looking specifically at single family versus rental housing (apartments or flats), the outlook is more positive for the single-family sector owing to strong supply of flats during the past several years (table 2.2.6).

This, of course, bodes well for demand for wood products. Of course, lifestyle and cultural traditions also impact preference for single family versus flats. For example, 70% of starts are single family in Ireland, the United Kingdom, and the Netherlands, while apartments are the predominant housing type in southern Europe.

TABLE 2.2.6

Single family housing outlook, 2000-2004

(1,000 units)

	2000	2001	2002[f]	2003[f]	2004[f]
Austria	21	19	18	17	16
Belgium	23	21	21	22	23
Denmark	9	10	10	10	11
Finland	12	10	11	11	12
France	199	191	180	180	185
Germany	230	185	171	181	190
Ireland	41	42	38	38	36
Italy	66	67	67	62	61
Netherlands	61	57	53	50	54
Norway	16	15	15	15	15
Portugal	36	35	32	30	30
Spain	166	145	135	130	130
Sweden	8	7	7	8	8
Switzerland	14	13	13	13	13
United Kingdom	137	135	129	133	140
Western Europe (EC - 15)	1037	952	899	898	924
Czech Republic	13	14	16	16	16
Hungary	13	17	20	22	25
Poland	15	41	48	60	80
Slovakia	36	7	9	11	12
Central and eastern Europe (EC - 4)	74	79	92	108	133
Euroconstruct countries (EC - 19)	1111	1031	991	1007	1058

Source: Euroconstruct, Dublin, June 2002.

Chapter 3
Market effects of wood promotion[1]

Highlights

- Multi-country wood promotion, which has been a long-standing tradition in the forest and forest products industry sector, is essential because of the highly fragmented structure of the sector and the fact that promotional campaigns are too expensive for one company.
- The first and most important objective of wood promotion is to enlarge wood's market share at the expense of competing materials.
- Because of intense competition in the marketplace, promotional work must be justified by measuring the market effects achieved, e.g. growing consumption, increasing market shares and rising prices.
- The key question in wood promotion is: How does decision making work in favour of or against wooden products in the particular target market?
- Wood promoters achieve their objective of higher consumption by changing decision makers' attitudes which are influenced by cultural and technical dimensions.
- Credibility is one of the important qualities of wood promoters, but it is faster lost than gained.
- Wood promotion is a success story as evidenced by growing interest in wooden products, especially in housing, as observed in Europe where the market share of wooden buildings has increased over the last twenty years.
- Key elements of successful promotional work are competence and neutrality, sufficient financial resources for passing over a critical threshold, leveraging to overcome small budgets and well-developed networks of the promotional bodies.
- The main problem of wood promotion is fundraising in a highly fragmented industry, where for many members of the wood sector, the "enemies" are seen in other wood products rather then in competing materials.
- Multi-country promotional activities must overcome cultural differences and the individual countries' proprietary sources of funding earmarked to build their own domestic and export markets.

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Secretariat introduction

All promoters of wood face questions of how best to conduct promotions, and how to monitor success of campaigns. This process is critical to ensuring that limited promotional resources are spent most effectively.

The UNECE Timber Committee and the FAO European Forestry Commission have long promoted wood as a renewable product which is environmentally friendly. They have held seminars and meetings on this theme, and jointly they created the FAO/ECE Forest Communicators Network with part of their mandate to promote wood.

The theme of this chapter, the market effects of wood promotion, was a suggestion for this special chapter and the UNECE Timber Committee market discussions in September 2002 by the new UNECE/FAO Team of Specialists on Forest Products Markets and Marketing. The suggestion came at the 2001 market discussions when "in light of the economic downturn in 2001, the Timber Committee stated that it is imperative to develop new products to expand existing markets and to establish new markets to meet consumers' needs. The Committee reasserted the importance for the forest products industry to work internationally to promote the environmental advantages of the sustainable production of wood. An opportunity to address these issues would be provided at the Committee's seminar under preparation in Romania for March 2003 on promoting the use of wood as an environmentally friendly raw material."[2]

The secretariat thanks Mr. Peter Hofer for writing this chapter. He is a senior advisor and partner of GEO Partner AG, a consulting firm specialized in environmental and resource management, in Zurich, Switzerland. He was director of Lignum, the wood promotion organization of Switzerland, from 1979 to 1999. It is intended that Mr. Hofer will give the keynote presentation on this same subject at the 24-25 September 2002 Timber Committee market discussions in Geneva, Switzerland.

We also express our appreciation to the heads of five campaigns, who provided information for this chapter: Mr. Holger Conrad, Arbeitsgemeinschaft Holz e.V., Mr. Kelly McClosky, CEO, Wood Promotion Network, Mr. Jan Hagsted, Senior Advisor, and former Managing Director, Nordic Timber Council, Mr. David Venables, European Director, American Hardwood Export Council and Mr. Conrad Gossweiler, Director, Lignum.

[2] Official UNECE Timber Committee Market Statement, adopted at the October 2001 Session.

3.1 Introduction

The highly fragmented structure of forest ownership and the forest industry necessitated cooperation in the field of wood promotion a long time before other industrial sectors began joint promotional activities. In many countries wood is harvested and processed by small manufacturing facilities in rather localized regions. Working alone, companies cannot achieve large-scale market effects by promotional activities. The average forest or sawmill owner, as well as the producer of wood-based panels or millwork, is not in the position to finance promotional campaigns for wood or wood products on their own. For successful promotion of wood and wood products, it is evident that it must be done in cooperation. Although the processing units are continually growing and wood products are increasingly distributed internationally, the corporations and their associations are still relatively small in comparison with those of the substitutes. Even pulp and paper industry corporations are not big enough to do sector-wide promotional work.

Following a period of satisfaction with past achievements, wood promotion has been getting increased attention in the last ten years. This is due to several mutually reinforcing developments of which the most important are increased market competition, decreased profitability and structural developments in the sector The economic situation of forest products producers has become more difficult. Consequently every expense must bring a measurable short-time return on investment. In times of economic change, when companies fear for their economic survival, one of the important issues is whether it is worthwhile to invest money in joint wood promotion or not. Do the funding firms and associations profit sufficiently for the money they spend, and do they so in a satisfactorily short time period?

Now more so than before, promotional work expenses must be justified and levels of achievement measured through follow-up actions and projects of the promotional bodies. This is done by proving, or at least identifying that the desired market effects were achieved.

3.2 Markets and market effects

3.2.1 *Definition of markets*

To measure the effects of promotional work, we need to define precisely what we intend to achieve. Growing consumption, increasing market shares or raising prices of wooden products are desired market effects on a general level. For the raw material wood, with its wide range of applications, the target markets have to be defined relating to products and geographical regions.

The markets for buildings, furniture, do-it-yourself products, paper and paper-products, as well as energy, are the most important ones. The product dimension and the geographical limitation are normally defined by the contributors and associations and their sphere of activity. Market effects have to be achieved and therefore to be measured for these products and regions.

It is normally possible to characterize and measure facts and figures reflecting the developments of defined product markets in specified regions. However, it is much more difficult to attribute an observed market effect solely to the efforts of the promotional bodies or to identify their specific contribution to the measured effect. There are numerous direct and indirect influences on the different markets: general economic trends, cultural developments, technical improvements to wood products, as well as competing products and materials. Added to those are changes of legal constraints. All these factors can affect the target market. However, sometimes measured market effects can even show opposite developments to what the promotional work had intended.

The following analysis focuses on the building market sector because it is the most important one for wood with regard to revenue and added value. A few definitions would help in understanding the analysis:

- Wood promotion denotes joint communicational activities of several companies or/and professional associations to achieve positive market effects in favour of forest owners and the forest industry sector.
- Market effects can be growing consumption, increasing market shares or rising prices of wood products.
- Promotional organizations are the bodies or institutions doing the above-mentioned wood promotion work. They are in general funded by the forest owners, forest industry and Governments.

3.2.2 *The cultural and technical dimension of decisions*

For a better idea of which market effects should be measured, it is important to know more about the promotional work that has to be done. Every market follows its own rules and has its own competing materials and particular actors. Decisions in favour or against wood products affect each of these markets in a specific way. How decision-making works in the particular target-market is the key question for every wood promoter.

Wood and wood products are in constant competition with other materials and products. The market success of materials or products depends on various factors. To satisfy a buyer's need is the most important requirement for a product to be successful in the marketplace, but it is not the only one. Buyers need to have the product at the right time and in the right place. They have a general idea of how much they are prepared to pay and this has to correspond with the product's actual price. They will not buy a product or material if they do not know enough about its characteristics. They not only have to know about the existence of the product, but also have to believe in the product's or material's ability to satisfy his needs.

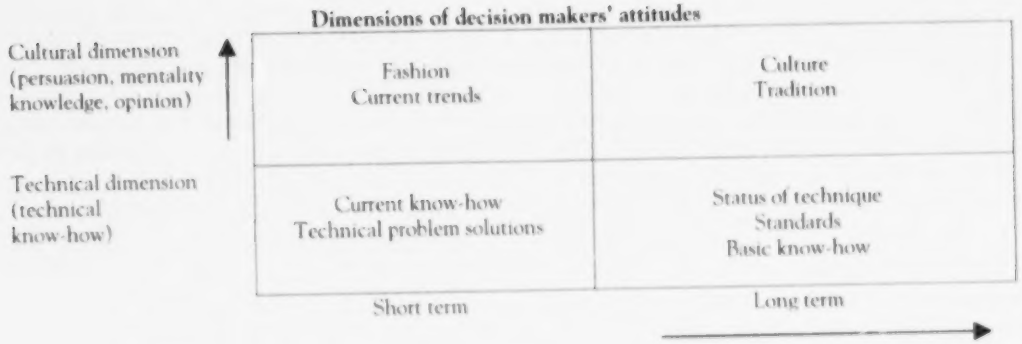
Promotional activities relate to the production of information about products, materials and services. Promotion deals not only with hard facts and figures, but also, and even more so, with opinions and beliefs. Because decisions are based on attitudes, promotional work attempts to influence these attitudes to achieve decisions in favour of wood and wood products. Attitudes are formed and influenced by cultural and technical dimensions (figure 3.2.1). Both aspects have long-term elements, e.g. cultural background, and short-term elements, e.g. current fashion trends.

In addition to the cultural aspect, a technical dimension is responsible for the attitudes of decision makers. Here too, long-range and short-term aspects can be differentiated. The long-range aspect is given by the status of techniques (what is technically possible and what is not), standards to insure security and safety, and the basic know-how of decision makers about technical status and standards. Short-term aspects consist of having and knowing current technical solutions.

Having the intention to influence attitudes in a positive way, that is to bring about more pro wood decisions, we must be aware of this portfolio. Culturally and traditionally formed attitudes can only be changed over a long period of time. Promoters have to make sure that decision makers' action is in accordance with their cultural and traditional persuasions. For example

FIGURE 3.2.1

Dimensions of decision makers' attitudes



it can take a long time to introduce wooden buildings in a region with a stone (concrete) building tradition, especially where wooden buildings have the image of lower-class dwellings.

The product or material being promoted has to fit the decision makers' idea of fashion or current trends in order to bring them to a pro-wood decision. Nevertheless, it is possible to set a fashion! The current interest in wooden houses in western Europe is at least partly due to the fact that several well-known architects designed and constructed some interesting buildings in wood. Their designs then found imitators. One of the trends today is the general concern about the quality of life and the environment. As a renewable raw material, wood can take advantage of this concern on the one hand; on the other hand, the promoter has to deal with the questions concerning the ruthless exploitation of forests.

In relation to the technical dimension it is important to show what is technically possible. Examples are the best proof of what wood can achieve. It is often necessary to propose to decision makers that they should choose wood as a building material. Architects and constructional engineers may choose other competing materials if they do not know enough about wood construction possibilities.

If wood consumption is to increase in the long term, promoters need to initiate research and development in favour of new techniques and solutions. New findings can render possible the adaptation of standards and therefore facilitate the utilization of wood. A case example is the liberalization of fire regulations in Switzerland, which is one of the long-term activities of Lignum. Less restrictive and more technically appropriate fire regulations have brought and will bring in the future a huge extension of the market for wood. This important step in standards liberalization required considerable work in educating Swiss architects and carpenters with regard to the advantages of wood.

3.2.3 *Decision makers in the marketplace as a target audience – who decides in favour or against utilization of wood?*

The decision for or against a product, material or service is generally made by more than one person. The more complicated a production or market, the more persons involved in the decision. Although the functioning of the wood market varies from one country to another, the building construction market sector is extremely complicated. The following persons and professionals are normally involved in construction decision-making:

- Building owners, buyers and users
- Architects
- Construction engineers
- Real estate firms
- Building contractors, carpenters and mill workers
- Different links of the wood working industry chain
- Wholesalers, agents and retailers

Material decisions in the building market are influenced directly by regulatory authorities, institutions and organizations:

- Authorities that grant building rights
- Organizations that create standards
- Financing institutions
- Insurance companies

These decision makers are part of a broader group representing the cultural background and regulatory environment, as well as the potential wood consumers, usually defined as:

- General public, divided into different groups with their opinion leaders and cultures.
- Mass media, as the communication channels and amplifiers of opinions and facts
- Politicians and political parties

Every promotional concept has to be based on a close analysis of the specific situation of the building market in question. Some promotional organizations act in a "research-driven approach" to define exactly what and how they have to do their work.

In western Europe almost every new building is individually designed, thus architects have a predominant influence on the material decision. For larger buildings, construction engineers have a more important position. In North America on the other hand, this important role can be attributed to builders and building contractors.

3.2.4 *Adequate measuring of market effects of wood promotion*

Having considered attitudes of decision makers and their influence on material choices in construction, promoters have to define the change in attitudes that they intend to achieve for a specific group of decision makers. Their work can focus on cultural as well as technical dimensions. The objectives have to be based on a close analysis of current attitudes and the changes that might need to be made to achieve more pro wood decisions, or in other words, changed behaviour. This change in behaviour is an adequate indicator of the market effects of wood promotion.

To measure the effectiveness of promotional work, polls should be conducted before the start and at the end of a campaign. This measurement has to be done in conjunction with the above-discussed indicators of changes in consumption, market shares and price situation.

3.3 How to reach market effects by wood promotion?

3.3.1 *How to reach decision makers in order to change their attitudes*

There is a wide choice of possible communication instruments to bring messages from the sender to the target audience(s). These are chosen in order of suitability in reaching the target group and changing its attitudes. The number of intended contacts is as important as the information that should pass.

A great difference exists between technical and cultural information. An architect will utilize a different communication channel for advancing professional know how than for forming his opinion about exploitation of forests in his country and abroad. For technical information the target audience wants to know the sources used for this purpose so that they are able to go back to the source at any time. If the promoter on the other hand has to bring a message to persons who are not looking for, and are not interested in knowing it, the promoter has to organize spontaneous contacts for example through advertising in newspapers or by commercials on television. A promoter realizes that an opinion leader reads different newspapers and magazines from the average person and must target the message and the media accordingly.

Multiple promotional tools exist which should be chosen according to the costs they entail and the market targeted. The Internet has brought many new and generally inexpensive possibilities for information transfer. The bringing together of different instruments to form a good marketing mix is a question of optimization.

3.3.2 *Optimization of costs and benefits - marketing mix and leveraging effects*

To concentrate the activities on any selected target market, choice of a few instruments and the most important arguments is simply an economic requirement. Communicative marketing activities are always expensive. In only a few cases can sufficient funding be raised based on the real financial needs of the campaign. However, this is not unique to promotional bodies in the forest industry sector.

Knowing the effectiveness of leveraging effects, wood promoters choose their target audience. Which part of the target public is able to amplify or multiply the promoters' messages, and by which group can the promoter get help? To achieve leveraging effects in a highly fragmented production structure with its huge number of small firms and employees can actually be an advantage in comparison to competing industries. If all members of the wood chain repeat the same message about wood, the promotional impact on consumers' behaviour can be extremely high. Promoters looking for leveraging effects must seek the interest of groups to amplify the message and structure the campaign in the intended way. The "amplifiers" have to know what they are expected to do and why they are expected to do it. For example, one of our campaigns in Switzerland was not successful because woodworking companies did not utilize posters made available to them, which were addressed to a large public. They failed to identify with the message even

though the target audience reacted in a positive manner. In brief, the communication chain was broken because the "amplifiers" did not relay the message.

3.3.3 *Why should decision makers believe what wood promoters are saying?*

The information market is highly competitive. Everybody, everyday, is confronted with huge quantities of information and must constantly make choices, whether to take notice or not. The choice, which is often an unconscious one, is normally made within the first seconds after receiving the message. Promoters have developed many instruments to attract and hold the attention of the targeted audience. But even when that has been achieved, the next question is, do the receivers believe the message? Do they know the sender of the message? Do they know if the message is credible? A promoter of wood and wood products has to be known and credible in the minds of the targeted decision makers. To be known as a credible and reliable sender of information requires a certain amount of time being active in the promotional business. The target audience can only judge the credibility of a promoter based on previous experiences. The intended audience has to feel that the promoter's messages are in generally true and precise. To a certain extent people accept special interest groups' arguments. But whatever is said has to be correct. It is true that gaining credibility takes a much longer time then losing it.

A good reputation will enable a promotion organization to convince target audiences in difficult and controversial questions. Sometimes testimonials of well-known and highly regarded personalities can support the promoter's work. These people will be at the promoter's disposal only if the promotional body itself is credible.

It is the author's conviction that optimal results of a promotional body are achieved when it is both well known and credible. Gaining a reputation can require many years, which contrasts to financial backers demands for short-term payback of promotional work.

3.3.4 *Efficiency criteria as indicators of market effects*

Instead of direct indicators of market effects, wood promoters often utilize "efficiency criteria". These indicators show primarily that the promoters were efficient in their work, but not necessarily that their work was effective. Examples are the number of contacts established by advertisements, website hits, articles published in newspapers and magazines, brochures distributed and books sold. However, it seems that these indicators are distant from intended market effects. Are they therefore useless for judging promotional work?

Far from it. These indicators are effective measures of the success of promotional activities. Newspapers publishing articles about communications of a promotional organization without asking simultaneously for payment or the purchasing advertisements prove that the message is of interest and value for their readers. The large number of technical books sold proves that buyers need that specific information. The same can be said for well-attended conferences or high visitor turnout at trade fair presentations. The interest demonstrated gives a strong indication that the messages passed to the addressee. The new knowledge will in turn provoke changes in attitudes through changes in know-how. Once again these indicators have to be combined with the direct market effects observed.

3.4 Wood promotion of recent years is a success-story!

3.4.1 *Observed market effects*

Despite the stone and concrete building tradition in western Europe, a growing interest in wood products, especially in the housing sector is evident. Market share of wooden buildings (residential and non-residential) and of wooden building components has increased in the last 20 years. However, because of unfavourable general economic conditions, growth in wood consumption has slowed down. As a result of stronger competition owing to the opening of international markets, the forest industry was unfortunately simultaneously confronted with decreasing prices for its products. Nevertheless, under these adverse circumstances, wood promotion has directly influenced this overall positive development.

In Switzerland, a rather "stone tradition" country, the wood promotion organization succeeded in liberalizing fire regulation standards. This opened a huge market potential for wood construction and buildings. Originally the potential market growth was estimated at roughly $200 million, which is a huge amount in the relatively small Swiss building market. However, in the first years after the liberalization, approximately 1,000 additional buildings, representing an average value of $150,000 each, were constructed, i.e. $150 million in the short term. And this was not the entire potential. Changes in fire codes were approved by fire standard authorities thanks to high technical qualifications of the Lignum representatives

and their precise work. The success achieved was not the last step – further liberalization is in preparation.

Representatives of the forest industry often look at other industries with great respect while ignoring that conversely, organizations of competing materials respect the positive development of wooden buildings market share, the growing wood know-how of architects and engineers, and the positive attitude and sympathies of the public as well as of important authorities. Promotional organizations of competing materials are aware of the advantageous ecological position of wooden products and the high motivation of the members of this industrial sector. These attributes of wood are as important for its promotional success as money.

3.4.2 *Important elements of the successful work*

The success story of wood products was not written only by wood promoters. Changing attitudes in the public, results of research programmes and improved training courses of the forest industry cadre are also responsible for this development. Nevertheless, promoters are responsible for part of the success and the following factors may also be relevant.

3.4.2.1 *Respect for competence and neutrality*

Competence is one of the key factors in the forest and wood information market. For critical decisions recipients must be sure that the facts and arguments communicated by one interest group are correct. Neutrality means a behaviour that is not dependent on one single company or an extreme interest group. Neutrality means remaining open-minded also for other arguments and trying to understand them. The fact that most of wood promoting organizations have been in existence for a long time offers them the chance to be recognized for the above-mentioned important qualities.

3.4.2.2 *Sufficient financial resources to be heard*

To be heard means competing with all other communicators on a huge and competitive information market. Until now most of the organizations had sufficient funding to overcome the critical mass. They found specific means to concentrate on selected activities and goals for a well-defined target audience. And they developed many strategies to reach the public and to get its attention with low budget strategies.

3.4.2.3 *Leveraging*

Leveraging is an important element to overcome small budget limitations. As mentioned previously, the highly fragmented structure of the forest and forest industry sector is a strength rather then a weakness. Special concepts are necessary to ensure participation throughout the chain in an effective way.

3.4.2.4 *Well-developed network*

Networking is a key element of current success. In some respects networking is linked with the above-mentioned leveraging and consists in developing extensive contacts and working well together with:

- Research and development institutions
- Professional training institutions
- Authorities and standards-developing organizations
- Financing institutes
- Mass media
- Architects and engineers
- Professionals of the forest industry sector.

3.5 Successful organizations

The foundation of this chapter is based on responses to questionnaires sent to four wood promotion organizations: the American Hardwood Export Council (European Office), Arbeitsgemeinschaft Holz (Germany), the Nordic Timber Council, the Wood Promotion Network (North America). Equivalent information for Lignum (Switzerland) was added by the author who was the director for almost 20 years.

3.5.1 *Wood Promotion Network*

History. The precursor of the Wood Promotion Network (WPN) is the "Wood is Good" campaign. WPN started the promotional campaign "Be constructive – Wood" in 2001, after 2 years of preparation.

Goals. WPN's mandate is to reduce business risks associated with product substitution and anti-wood and anti-forest efforts and to grow the market in long term. Objectives of the campaign are to improve the consumers' opinion about wood as building product, to encourage its acceptance and use for builders and to reinforce its overall value.

Activity focus. The "Be constructive – Wood" campaign in North America is based on know-how and experiences of several promotional organizations. Advertisements appear in United States and Canadian consumer and trade magazines, television spots and newspapers. A "guerilla marketing" approach reaches

consumers in unexpected places. Their business-to-business programme helps builders and retailers provide factual wood performance and resource information to their customer. They have a "be seen everywhere" approach at the International Builders Show in Atlanta, Georgia, United States, and have launched a website. Messages are leveraged by suppliers, customers and Governments.

Highlights of success. Their virtual office approach consists in building the largest possible coalition of pro-wood companies and allied organizations. WPN was set up as a business that operates with industry principles and thus must deliver a demonstrable return on investment (ROI). ROI is reflected in the benchmarks and the changes in opinion achieved over time. In sum, the campaign has a significant impact where it has a presence, moving opinion between 5 and 12 percentage points.

Funding. Most of the funding comes from the North American industry, along with some small resources from suppliers, customers and the Government. The WPN is a growing coalition of over 280 wood product companies, associations and allied interests. The annual budget is $10 million.

3.5.2 *American Hardwood Export Council*

History. The American Hardwood Export Council (AHEC) was set up in 1989 as the trade association of United States hardwood producer companies and industry associations, specifically established to coordinate overseas market development activities and to aid American exports of hardwood products by providing improved information to agents, importers and users of these products in other countries.

Goals:

- Raise the value and volume of United States hardwood product exports.
- Diversify the species, grades and products being exported to overseas markets.
- Diversify the market spread to ensure the long-term stability of United States hardwood.
- Maintain markets where significant gains have been achieved.

Activity focus. Special architectural campaigns are conducted in highly developed countries with offices in Europe, Hong Kong S.A.R.[3], China, Japan, Mexico and the Republic of Korea. AHEC Europe, active in the most important market, believes that public relations (PR) is the most effective approach, comprising advertising and generation of regular press releases and feature articles, especially for magazines in the wood trade, design, architectural and construction sectors. Other marketing activities are seminars, fashion shows and technical publications. AHEC has developed a strategy for identifying and collating information on building projects where United States hardwoods are used. Publicity that is generated is used to create links to AHEC information material as technical publications. The main arguments used are sustainability of the resource, responsible utilization, diversity of species and commercial advantages.

Highlights of success. This multi-country, multi-activity promotional programme is extremely successful, as global United States hardwood exports (excluding logs) doubled from $1.1 billion in 1990 to $2 billion in 2000. However, it is difficult to show a specific link through statistics.One of the results emerging from the 2000-2001 programme evaluation was that 28% per cent of all new architectural contracts specified United States hardwoods for the first time. This has been achieved by a combination of AHEC's key activities, advertising, PR, literature and the new website.

Funding. Over 100 export-oriented companies and regional and national United States hardwood trade organizations mainly located in the eastern part of the United States contribute, as well as the federal Government, through export promotion programmes. The annual budget is $4 million.

3.5.3 *Nordic Timber Council*

History. The Nordic Timber Council (NTC) was set up in 1993 as shareholder company owned by the three promotional organizations of Finland, Sweden and Norway in the proportions of 40%, 40% and 20% respectively.

Goal. The mission is to promote the use of wood in general and Nordic wood in particular, based on sound environmental principles. The mission is being updated. The goal for the present British campaign is to increase wood consumption to 0.25 m^3 per capita within 5 years. The NTC is currently developing a new mission, which will focus more on generic promotion of forests and wood products based on sound environmental principles.

Activity focus. The NTC's current campaign is Timber 2000 (wood. for good.) in the United Kingdom. In addition, another project targets new markets in Far East. Two new projects are being launched: "Pan European PR" and "Building Europe". These campaigns aim at building with wood and living with wood. Improving wood-based paper packaging is being discussed. Principal target audiences are decision

[3] Special Administrative Region of China.

makers within a given sector and intermediate groups are chosen as advisors and opinion formers.

Highlights of success. Development has been fairly successful for the Nordic sawmilling industry as measured by exports now being on the same level as total production in 1993. Effects of the current United Kingdom campaign are beginning to show both in terms of opinions and actual consumption. Success is measured by third party evaluation doing a thorough investigation on the performance and results.

Funding. Basic financing was originally proportional according to export sales by companies belonging to the three owner organizations: Svenskt trä e.f. (Sweden), WoodFocus (Finland) and Trelastindustriens (Norway). Their members are sawmilling companies that fund the promotional work. For individual projects the financing may vary subject to agreement in each individual case. Activities are more and more often organized (and financed) as projects rather than ongoing institutional work. The annual budget is $8 million.

3.5.4 *Arbeitsgemeinschaft Holz*

History. The Arbeitsgemeinschaft Holz organization was founded in 1953 by the forest and forest industry in Germany.

Goal. The goal is to expand the market shares of wood in buildings in Germany.

Activity focus. Technical information is developed for architects, engineers, authorities and professionals of construction in the form of technical books and brochures, which is further disseminated through training courses Advice is provided on demand and standardization work is supported. Advertising targets building owners and people interested in building. The current campaign is "Wood Offensive" , a campaign financed by the wood sales fund. Exhibition stands are set up at construction fairs.

Highlights of success. The growing market share of wooden buildings in Germany is due to the permanent support given by *Arbeitsgemeinschaft Holz*. Their brochures Informationsdienst Holz (information service for wood) are known by 95% of architects, engineers and professionals.

Funding. The national wood sales fund (*Holzabsatzfonds*) based on forest- and sawmill-owner contributions ,finances more than 50% of the budget. Professional associations supply fund for special projects and information material sales cover the remainder. The annual budget is $3.5 to 5 million.

3.5.5 *Lignum*[4]*, Schweizerische Holzwirtschaftskonferenz*

History. Founded in 1931, Lignum has been an organization with professional staff in Switzerland since 1945. It opened a branch office in the French-speaking region of Switzerland in 1950. In 2000 it joined with the political organization of forest and forest industry, the *Schweizerische Holzwirtschaftskonferenz*.

Goals. Lignum generates ecological, economical and social benefits by concentrating the strength of the forest and forest industry sector. It promotes the image of its members in society, economy and political circles. It aspires to have sustained competitiveness of the branch. The organization takes care of the resources, the image of forest and forest industry, research and development and training.

Activity focus. The Promotional work of Lignum is mainly focused on the building and construction market in Switzerland and some work is done for furniture and packaging products. Technical work is designed to enable architects, engineers and professionals to utilize wood in a correct way through technical books and brochures, training courses and providing advice on demand. Public relation activities and advertising are intended to inspire the general public, building owners and opinion leaders. Ecological arguments are of growing interest. Media service, brochures, exhibition stands and an extensive website are the most important instruments. Owing to a lack of funds, there are neither advertisements in newspapers nor commercials on television.

Highlights and success. The current high perception of wood materials is due to permanent promotional work spanning decades. Lignum managed to interest leading architects in working with this material and made their buildings known to the general public and to decision makers. The most important activity culminated in a first step of liberalization of fire standards regulation, which opened huge market potential. This work is ongoing. Lignum is accepted as the first source for information concerning wood.

Funding. Lignum is funded by professional associations, especially forest- and sawmill-owners, by government programmes and by its membership, which mainly consists of architects and engineers (approximately 4,500 members). Sales of information is another revenue generating activity. The annual budget is $1.7 million.

[4] Lignum is the Latin word for wood.

3.6 Is wood promotion in danger?

There is to be broad consensus that international efforts for wood promotion are necessary. Direct effects of sectoral or national wood campaigns demonstrate that wood promotion can be successful. The necessity for cooperation in future campaigns is shown by the fact that competing industries are aware of and reacting to the growing interest in wood products.

The main problem of wood promotion is fundraising in a highly fragmented industry structure. The forest and forest industry sector does not belong to the most profitable economic sectors. For many members of the wood sector, the "enemies" are seen in other wood products rather then in competing materials of steel, concrete, brick or plastic. For example, some sawnwood manufacturers fear engineered wood products rather than steel I-beams and framing replacements. When a major concern is that one of the co-financing parties could profit too much in comparison to its funding, it can be difficult to bring all the partners of forest industry together for financing joint campaigns. For example, in Switzerland we heard representatives of carpenters and joiners association argue that it is the forest and sawmill industries, responsibility to finance pro-wood campaigns, even though their members benefit to a high extent from the promotional work. The discussion on how fair financing is organized is the most dangerous one in a fragmented structure. It could lead to immobilization of a promotional body.

In the competitive information market a small industrial sector such as forest industry has to join together for promotional campaigns. If not, the budgets are too small and the pro-wood arguments will not be heard, much to the benefit of competing materials. Concentration on important target audiences, using the most effective instruments and a few focused arguments can save expenses. This is valid with the precondition that the promoter knows exactly what has to be done. Too often in the past promoters acted upon their beliefs rather than on carefully studied initial situations. They wanted to spend the limited finances primarily for activities and not to invest in research on questions, for which they thought they knew the answers.

The current success of wood as a building material is due to a long-term investment effort by the wood promotion groups. The current economic climate focuses on short-term considerations. Promotion has not only to prove its effectiveness, but also to offer a short-term return on investment. In many countries promotional work is therefore organized by projects rather than as ongoing institutionalized programmes. This is no problem if the projects are of sufficient duration, build upon one another and the funding companies and associations are aware of the necessity of continuity of promotional work.

It would seem that budget shortages should lead to collaboration across borders. In Europe the national promotional bodies have maintained loose cooperation through the West European Timber Information Council for many years. Cooperation consists of exchange of information about successful activities, influential messages, eminent buildings, technical developments and interesting brochures and photos. In only a few cases were two- or multi-country campaigns conducted. Most of the time, cultural differences precluded combined campaigns between countries. Another reason was that national organizations focused on domestic markets. Because of funding from their domestic forest industry, promotional organizations were not able to join together for shared campaigns with the promoters from an export-oriented country. It is absolutely clear that there should be collaboration over national frontiers. But there is no assurance that the above-mentioned obstacles can be overcome.

The author is convinced that wood promotion is not in danger. But to continue successful work in challenging economic conditions, promotional work has to be organized differently. The first and most important objective of wood promotion is to enlarge market shares of wood products at the expense of the other competing materials. The different wood materials and professional groups must find means to join together. A discussion about the benefits and costs for every partner has to be conducted and agreements and understandings obtained. Similar discussions have to take place between domestic-oriented promotional organizations and those of exporting countries. Especially in Europe, joint campaigns among several countries have to be aware of the different cultures and languages between countries. If this is not done, campaigns can be counter productive. With 35 European countries in the UNECE region and 55 countries total, the needs of different national audiences are diverse and must be carefully considered when planning joint promotions. If the different promotional organizations for wood manage to improve collaboration, wood will have a better future.

3.7 References

Responses to questionnaires and communication with promotional organizations submitted by:

Mr. Conrad Gossweiler, Director, Lignum, Zurich, Switzerland, www.lignum.ch

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Mr. Jan Hagstedt, Senior Advisor, Nordic Timber Council, Stockholm, Sweden, www.nordictimber.org

Mr. Kelly McClosky, CEO, Wood Promotion Network, Vancouver, Canada, www.beconstructive.com

Mr. David Venables, European Director, American Hardwood Export Council, London, United Kingdom, www.ahec-europe.org

Hofer, Peter. *Benchmark study about common marketing of steel and wood - comparison of the two responsible organizations SZS and Lignum in Switzerland 2001*; (unpublished).

"A Summary of 'The Competitive Climate for Wood Products and Paper Packaging: the Factors Causing Substitution with Emphasis on Environmental Promotions'", *Geneva Timber and Forest Discussion Paper*, ECE/TIM/DP/16, 1999.

Chapter 4
Trade links strengthening as Turkey's forest sector is modernized

Turkey's forest products markets[1]

Highlights

- Turkey's forests produce 7.5 million m^3 of industrial roundwood annually, and almost 10 million m^3 of fuelwood, of which an important portion is illegally harvested.
- The forest products sector is of strategic importance for economic development, especially for rural employment.
- Turkish forest entrepreneurs are extending out with investments in CIS countries and central and eastern European countries, e.g. Bulgaria and Romania.
- The forest products sector, which has been constrained by difficult general economic conditions in Turkey, had a new shock in early 2002 when windstorms blew down 3.2 million m3, more than one third of the annual harvest.
- Roundwood prices, which were finally rising in 2001 following a dramatic decline over the last decade, could fall back owing to the oversupply from the windthrow.
- Sawnwood production and consumption are decreasing owing to substitution by wood-based panels and engineered wood products, as well as non-wood substitutes.
- Panel production experienced a steep growth phase through 1996, and although currently slowing as a result of rationalization and consolidation, a 25% capacity increase is forecast for some products in the short term.
- While Turkey is a net importer of roundwood and primary processed wood products, with many imports coming from CIS countries, it is a net exporters of secondary-processed wood products.
- Pent-up consumption of paper and wood products could accelerate if current economic plans are successful.

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Secretariat introduction

The dynamic situation of the forest products markets in Turkey, and its strategic link in trade between CIS countries in Asia and with Europe, becomes apparent from the information in this chapter. Despite persistent economic problems, Turkey's forest sector is modernizing. Two forces affect the sector's development: 1. a growing population with pent-up demand for housing; and 2. globalization of forest products markets and industries, with ramifications for investment and trade competition. As in many countries– both large and small, east and west– the forest industry is fragmented between many small producers of sawnwood and value-added products, and larger producers of pulp and paper. Consolidation through domestic and international acquisitions is under way.

Turkey's forest sector development within domestic and international constraints, is similar to that of countries in central and eastern Europe. Like those countries, Turkey aspires to EU membership, which would influence social and economic development.

The chapter develops the balance between the forests and the forest industries, which are relying on imported roundwood as well as domestic raw material. From the tables in the following chapters, Turkey's prominence in European trade can clearly be seen. Turkey is the largest roundwood importer in the "Other Europe" subregion. Turkey is also a major producer of forest products, not only in the "Other Europe" subregion but in all of Europe combined. For example, Turkey is the second largest producer of sawn hardwood in Europe, and first in "Other Europe" (and third largest in the UNECE region behind the United States and France). It is among the largest producers of sawn softwood in "Other Europe" and the second largest producer of particleboard in the subregion too. Turkey's consumption of paper and paperboard is the largest in the subregion.

The influence of political and economic changes on the sector is clear. Turkey's forest and forest industry sector has been making important gains in 2001 and 2002, despite serious windstorm damage in January 2002, and a very difficult economic environment.

This chapter is part of a series of special chapters focusing on one of the UNECE region country's forest products markets. A listing of past chapters may be found in the annex.

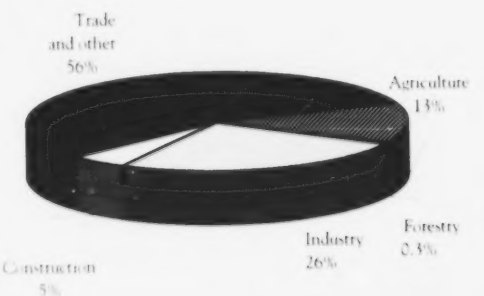
The secretariat would like to thank Mr. Ramazan Bali, Director, General Directorate of Forestry, Ankara, and member of the UNECE and FAO Team of Specialists on Forest Products Markets and Marketing, for producing this chapter with its valuable insight into the forest and forest industry sector in Turkey. We also appreciate the work of Mr. Ulvi Us, General Directorate of Forestry, Ankara, who supplied statistical information for this chapter. We take this opportunity to thank all the other people in Turkey who provided information and statistics for the chapter.

4.1 General economic development

The Turkish economy has been growing fast over the long term in spite of some fundamental structural problems, including frequent economic crises experienced during the past decade. The average annual rate of growth was over 4% in the 1980s. Since 1993, economic growth has been erratic. The growth rate has slowed slightly as a result of political and economic uncertainty arising from volatile and extremely high interest rates, high inflation and currency fluctuations. High public debt and budget deficits have been among the country's other major economic problems since the end of 2000.

GRAPH 4.1.1

Shares of GNP in Turkey, 2001

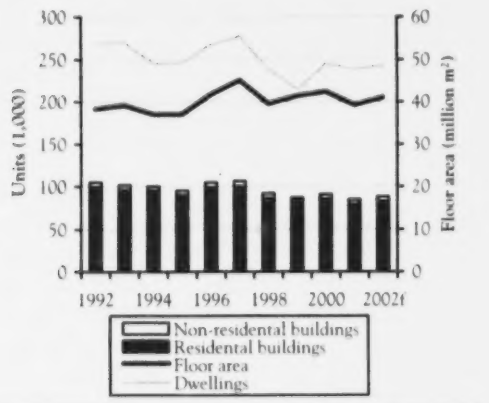


Source: *Main Economic Indicators, 2002.*

The share of industry in GNP rose steadily in the 1980s, but has remained steady since 1993, mainly because of high credit cost, economic uncertainty and instability, besides external effects (graph 4.1.1). The share of agriculture in GNP has been stable around 14% since 1992, falling from 25% in the 1980s. Building construction, which is the most important sector for wood products consumption, and one of the leading sectors in the economy, has been in recession since 1992 (graph 4.1.2).

GRAPH 4.1.2

Evolution of building construction in Turkey, 1992-2002



Note: f = forecast.
Sources: *Statistical Yearbook, 2000* and *Monthly Bulletin of Statistics*, March, 2002.

This sector grew rapidly in the 1980s as a result of legislation on low interest and long-term loans for residential construction. According to occupancy permits[2], the number of the new buildings constructed reached 105,000 in 1992, up from 57,232 in 1982.

Since then, the number of dwellings and buildings has fallen about 20% as a result of insufficient credit and adverse economic conditions. Despite the decrease in number, floor area has remained constant because residential buildings have been becoming larger and of higher quality.

Foreign trade improved dramatically as a result of removing customs duties and tariffs in line with economic globalisation measures. Commitments to the World Trade Organization General Agreement on Tariffs and Trade (GATT) and its associated agreements, as well as EU integration measures have accelerated this process. Removing customs barriers strengthened the competitiveness of Turkish industry. As a result, share of exports of industrial goods reached 91% in 2001, rising from 36% in 1980 and 79% in 1990. Both exports and imports have been increasing dramatically, although unsteadily, depending on exchange rate fluctuations. Total foreign trade value rose to over $80 billion in 2000, from $30 billion in 1990 and $10.8 billion in 1980. Major target export countries are Germany, the United States, the United Kingdom, Italy and France. Major sources of imports are Germany, Italy, France, the United States and the Russian Federation. The share of EU countries in both import and export was just over 50% during the last three years. The large foreign trade deficit is reduced by tourism, remittances of Turkish workers in the other countries and the so-called "shuttle trade" which started when tourists coming from the CIS began buying goods for resale in their countries. Additional economic indicators of Turkey are given in table 4.1.1.

TABLE 4.1.1

Main economic indicators in Turkey, 1992-2001

	1992	*1993*	*1994*	*1995*	*1996*	*1997*	*1998*	*1999*	*2000*	*2001*
Growth rates (% at 1987 constant price)										
GNP	6.4	8.1	-6.1	8.0	7.1	8.3	3.9	-6.1	6.1	-9.4
GDP	6.0	8.0	-5.5	7.2	7.0	7.5	3.1	-4.7	7.2	-7.4
Industry	5.9	8.2	-5.7	12.1	7.1	10.4	2.0	-5.0	5.6	-7.5
Construction	6.2	7.9	-2.0	-4.7	5.8	5.0	0.7	-12.5	5.8	-5.9
GNP (billion $)	160.7	181.8	130.9	171.9	184.6	194.1	205.8	187.5	202	148
Foreign trade (billion $)										
Import	22.87	29.43	23.27	35.71	43.63	48.56	45.92	40.67	54.50	40.51
Export	14.71	15.34	18.11	21.64	23.22	26.26	26.97	26.59	27.77	31.19
Payment balance (million $)	-974	-6 433	2 631	-2 339	-2 437	-2 638	1 984	-1 364	-9 819	3 314
Exchange index (1995=100)	89.9	82.6	114.8	100	93.8	92.8	87.4	82	76.5	
External debt/GNP (%)	34.6	37	50	42.6	43	44	47	55	60	78.6
Unemployment rate (%)	8.1	7.8	8.2	6.9	6.1	6.6	6.8	7.6	6.6	8.5

Source: Statistical Yearbook, 2000 and Main Economic Indicators, 2002.

[2] The occupancy permits are for construction within municipal boundaries.

Since the beginning of 2000, International Monetary Fund (IMF) economic programmes are being implemented. In line with the economic stability programme, some radical progress has been achieved. Inflation rates and real public debt costs as well as interest rates were reduced to reasonable levels in 2000. In spite of the improvements, the economy fell into a deep crises in early 2001. The main cause was the record high deficit resulting from the overvalued Turkish lira. Since mid-2001 a "Transition Programme for Strengthening the Economy", supported by the IMF and the World Bank, has been implemented. The programme aims at ensuring the economy against future crises and lay the basis for sustained non-inflationary growth. Since 1993 the dynamic Turkish economy nearly achieved a 4% economic growth, in spite of serious fundamental structural problems and an incredibly adverse economic environment.

4.2 Forest resources

Turkey's forest area is 20.7 million hectares; equal to 26% of total land area. Half of the forestland consists of productive forest while the remainder is degraded forests; 3.6 million hectares (17%) of the forestland is designated as protected areas, such as national park, natural park and nature reserves, conservation forest or gene conservation forests, and thus not managed for wood production. The Turkish forests contain a large diversity of ecosystems with global importance.

High forests are 75% coniferous, mainly Calabrian pine, Crimean pine, Scots pine, fir, spruce and cedar. Major species in hardwood forests are beech and oak, followed by alder, hornbeam, chestnut, poplar, ash and maple. In the coppice forests, oak is by the far the commonest species and constitutes nearly 50% of total coppice forest area.

All lands designated as forest are managed under the management plans prepared by the Ministry of Forestry. The total standing stock is 1.2 billion m^3. The overall average volume, 56 m^3/hectare, appears low because of the large areas of degraded forests. Average stocking is estimated at 125 m^3/hectare in the productive high forests and 33 m^3/hectare in the productive coppice forests. Annual total volume increment is about 31.7 million m^3 (table 4.2.1). Comparison of the results of the former forest inventory (completed in 1972) with the recent forest inventory (completed in 1999) shows an increase of 2.5% in forest area, 22% in total growing stock and 15% in total current volume increment. Despite this increase, the General Directorate of Forestry (GDF) reduced the annual allowable cut about 25% to account for illegal cuttings, to allow a build up of growing stock in under-stocked stands and to expand conservation forests and protected areas.

The area designated as forest excludes any forest areas smaller than 3 hectares owned by the private sector. Nevertheless, poplar and other some fast-growing species such as eucalyptus, willow and cypress on private lands are important sources of wood supply.

TABLE 4.2.1

Forest area, growing stock, increment and allowable cut by forest type in Turkey, 1999

(1,000 units)

	High forest	*Coppice forest*	*Total*
Area (ha) of which	13 800	6 900	20 700
Coniferous	9 900		9 900
Broadleaved	2 600	6 900	9 500
Mixed	1 400		1 400
Growing stock ($1,000 m^3$) of which	1 100	100	1 200
Coniferous	800		800
Broadleaved	300	100	400
Annual current increment (m^3) of which	26 900	4 800	31 700
Coniferous	20 000		20 000
Broadleaved	6 900	4 800	11 700
Allowable cut (m^3)	11 700	4 700	16 400

Source: *Turkey's Forest Inventory*, General Directorate of Forestry, 1999.

Currently no forestland is certified by an international scheme intended to demonstrate sustainable forest management. The domestic market does not require certified forest products and export markets do not appear affected by the lack of a certified label.

4.3 Institutional framework

The Ministry of Forestry (MOF) is responsible for conservation, development, planning, management and utilization of the forest resources. There are four general directorates under the Ministry. The General Directorate of Forestry (GDF) manages most forestland and undertakes activities related to forest protection, silviculture, forest regeneration and improvement, road construction and maintenance, cadastral surveys, management planning, production and marketing of wood and non-wood forest products. The General Directorate of Reforestation and Erosion Control

carries out reforestation, erosion control and range improvement activities on degraded forestlands. The General Directorate of National Parks, Game and Wildlife is responsible for designation, establishment, planning and management of the national parks, natural parks, nature reserves, nature monuments and forest recreation areas. The General Directorate for Forest Village Relations is responsible for supporting rural development activities in communities within or adjacent to forest areas.

4.4 Roundwood market

4.4.1 *Roundwood supply and utilization*

State forests supply more than 75% of roundwood. Contribution from private forests, which are less than 1% of the total forestland, is minor. On the other hand, fast-growing tree species plantations and agroforestry sites outside forest areas provide a significant amount of wood supply for the domestic market.

Roughly 7.5 million m³ of industrial roundwood and 5.0 million m³ fuelwood are produced from the state forests by GDF annually (table 4.4.1 and graph 4.4.1). In addition, nearly 4.7 million m³ of fuelwood is removed illegally from the State forests (graph 4.4.2). Private sector fast-growing plantations and agroforestry sites produce about 3.2 million m³ industrial roundwood and 1.4 million m³ fuelwood annually. The major tree species for sawlogs are Calabrian pine, Crimean pine, Scots pine, beech, fir, spruce, cedar and oak. The most favourable domestic tree species for furniture and veneer sheet are oak, Crimean pine, Scots pine and beech. The country has a vast variety of tree species and some locally produced high quality sawlogs and veneer logs, but their amount is limited. Ninety five per cent of logs produced are third class, which is not suitable for some uses such as furniture, door and window frame. As a result, there is a large gap between demand and domestic production of high quality logs. On the other hand, marketing problems arise frequently, mostly from insufficient demand for low-quality industrial roundwood.

In Turkey, the wood culture is low; for example, wood-framed construction is used in only 0.5% of houses. Advanced techniques of wood-framed housing are new and the related wood industry is at an initial stage. Wood usage is most common in small villages, where nearly 25% of the total population reside.

Nevertheless the major user of wood is the construction sector. After the large earthquakes in 1999, interest in construction of wooden houses has been increasing and new mobile wood housing techniques are developing.

The wood-based panel industry is also very important for roundwood markets, with 3 million m³ industrial wood consumption. Annual pulpwood consumption for wood pulp production is approximately 1.5 million m³. About 200,000-250,000 m³ of mine props and poles are consumed for mining, telecommunication and electrical transmission lines. The remainder of other industrial roundwood[1] which is about 1.2 million m³ and some portion of sawlogs, especially poplar and other low-quality logs, is used in pallets, packaging, and parquet flooring.

TABLE 4.4.1

Industrial roundwood and fuelwood production by species and assortment in Turkey, 2000

(1,000 m³)

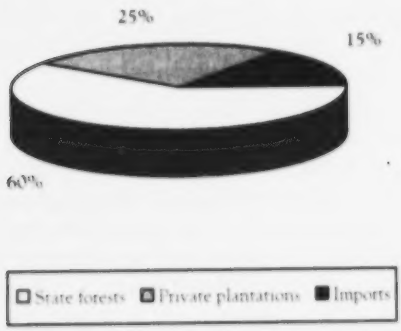
	Calabrian pine	*Other pine*	*Fir and spruce*	*Cedar and others*	*Total coniferous*	*Beech*	*Oak*	*Others*	*Total non-coniferous*	*Grand total*
Industrial roundwood	2 680	2 123	915	38	5 756	1 092	363	119	1 574	7 330
										0
Logs	999	846	637	11	2 493	440	51	23	514	3 007
Pulpwood	1 086	887	221	19	2 213	482	136	74	692	2 905
Of which										0
Pulp industry	826	498	196	11	1 531	2	1		3	1 534
Panel industry	260	389	25	8	682	480	135	74	689	1 371
Other industrial wood	594	390	58	8	1 050	169	177	22	368	1 418
Fuelwood	605	785	239	11	1 639	778	2 372	320	3 470	5 110
Of which										
High forest	369	233	73	5	680	327	304	72	703	1 383
Coppice						62	1 836	87	1 986	1 986
Harvesting residues	237	551	165	6	958	412	209	161	782	1 740

Note: For fuelwood, 1 stere = 0.65 m³.

[1] Other than sawlogs, veneer logs and pulpwood

GRAPH 4.4.1

Industrial roundwood consumption in Turkey by major supply source, 2000



Source: General Directorate of Forestry, 2001.

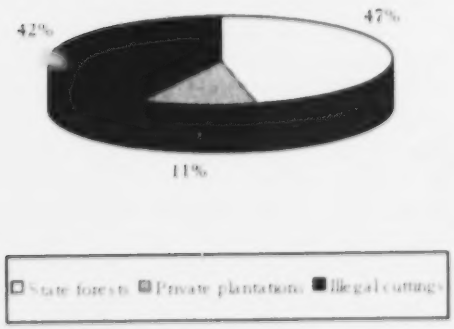
The largest portion of fuelwood, some of which is harvesting residues, is consumed by villagers located in or near the forest. On the other hand, nearly 1.5 million m³ of "fuelwood" is used as raw material in the panel industry.

4.4.2 *Roundwood median-term production and consumption trends*

Roundwood production and consumption has been decreasing since 1980 (graph 4.4.3). Annual roundwood production from national forests fell to

GRAPH 4.4.2

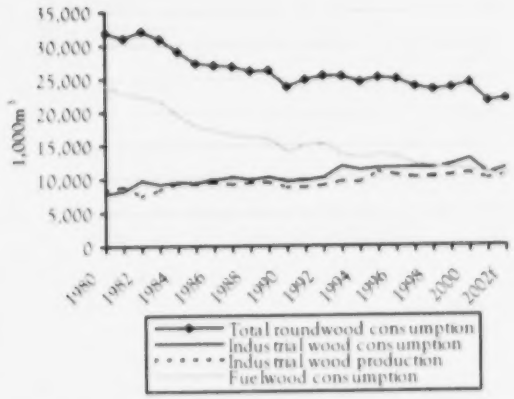
Fuelwood consumption in Turkey by major supply source, 2000



Source: General Directorate of Forestry, 2002.

GRAPH 4.4.3

Roundwood production and consumption trends in Turkey, 1980-2002



Note: f = forecast.
Source: General Directorate of Forestry, 2002.

12.7 million m³ in 2000, from 21 million m³ in 1980, a 40% decrease. In the same period, private sector production increased gradually from 1.5 million m³ to 3.2 million m³, as a result of higher wood prices and Ministry of Forestry incentives. While total industrial roundwood production and consumption increased slightly, fuelwood production and consumption decreased dramatically by 50%. Meanwhile industrial roundwood composition changed significantly. Sawlog and veneer log share have fallen to around the 50% level in recent years, down from 80% in 1980. Conversely, removals have increased gradually of pulpwood and other small-diameter, low-quality industrial roundwood, most of which in the early 1980's used to be left in forest or classified as fuelwood.

The main factors leading to a decrease in total roundwood production are the changes in forest structure and forest management plans. High timber stand improvement and harvesting costs, and weak demand for roundwood (with the exception of high quality logs), are other influencing factors. In spite of high economic growth and rapid population increase, the slight decrease of log consumption and limited increase of total industrial roundwood consumption resulted mainly from strong substitution. Usage of plastic and metal substitute materials for wood products increased rapidly during the last two decades, especially in the construction sector and for items such as window frames and doors. The slowdown in furniture production, recession in the building construction sector and changing construction techniques have also

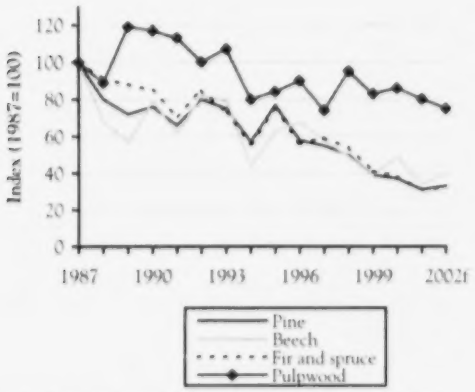
been important factors adversely affecting wood products consumption. In addition, wood-based panels and engineered wood products substitution of solid sawnwood is another significant factor in decreasing sawlog consumption. The major causes of reduced fuelwood consumption are modernization of heating systems and spreading availability of natural gas for heating and cooking.

4.4.3 *Prices*

Roundwood prices have decreased dramatically (by more than 50%) since 1987, when the prices were at peak levels (graph 4.4.4). This record price fall was also witnessed in third class pine and beech sawlogs (which fell by 68%). The price decrease was less for higher quality sawlogs, veneer logs and pulpwood (table 4.4.2). The price decline seems to have reversed somewhat from early 2002, when the prices were at the lowest levels.

GRAPH 4.4.4

Sawlog and pulpwood prices in Turkey, 1987-2002



Note: f = forecast.
Source: General Directorate of Forestry, 2002.

The main factors leading to dramatic price declines were as follows: 1. removal of customs duties and other trade barriers, which constituted about 22% of the roundwood price in 1992; 2. gradual elimination of the import limitations for primary- and secondary-processed wood products; 3. increased imports of lower-priced and better quality roundwood, especially from CIS countries; and 4. weak domestic demand for wood, with the exception of high quality logs. Also the General Directorate of Forestry was the sole seller.

4.5 Forest products industries

The forest products industry is a small sector in the state economy in terms of its added-value and production value. The industry, especially sawnwood manufacturing enterprises, is spread throughout the country. Many small-scale sawmills, with labour-intensive technologies, provide employment and income opportunities in the poor, rural areas. Therefore, the sector is important and strategic with respect to some of the development criteria such as employment creation, removal of regional differences and income distribution.

TABLE 4.4.2

Roundwood prices in Turkey, 1992, 1996 and 2000
($/m^3$)

	1992	*1996*	*2000*
Sawlogs (class III)			
Pine	158	111	66
Beech	154	125	83
Fir and Spruce	149	96	61
Sawlog (class II)			
Pine	259	204	108
Beech	199	184	143
Oak	367	211	155
Veneer logs			
Pine	672	502	464
Beech	243	201	165
Oak	420	381	301
Pulpwood (without bark)	36	34	32
Pulpwood (with bark)	33	29	25

Note: Roundwood prices are adjusted for inflation. Prices are at wood storage sites, which sometimes are close to harvesting sites, and sometimes up to 35 kilometres away.
Source: General Directorate of Forestry, 2001.

The whole industry has been adversely affected by the recession in the construction sector (the primary consumer of wood products), and a simultaneous slowdown in the furniture sector, which has an extremely high growth potential. Other adverse developments are the decrease in consumer confidence owing to the fluctuations encountered in financial markets, increasing use of wood substitutes and the capital flow to Bulgaria, Romania and some CIS countries by the wood industry sector. The State-owned wood industry plants and enterprises have been privatized rapidly since 1993. However, the goals of privatization, such as technological renovation, productivity and production increase, have not been achieved. Capital investments in some eastern European countries and CIS countries, which have raw material advantages, and lower cost of production, play an important role too. Although a few plants have been rationalized following the privatization process, many are still closed or are operating below capacity.

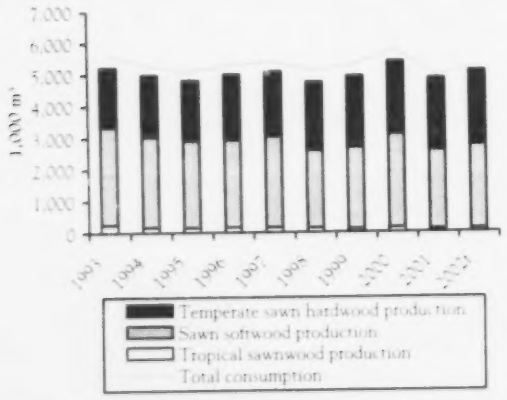
Although Turkey is rich in tree species, the shortage of supply in high quality roundwood is an important constraint to producing high quality final products that are competitive in international markets. High wood harvesting costs from the forests located on difficult terrain and high costs of transportation to the plants, which are usually at long distances from the harvesting sites, are other disadvantages of the sector. On the other hand, rapid transformation in consumption patterns and habits, population increases, urbanization and a large and dynamic domestic market are advantages of the sector.

4.5.1 *Sawnwood manufacturing*

Total annual sawnwood production capacity is about 10 million m³. The number of enterprises and the total production capacity are decreasing, whereas the numbers of medium-scale and integrated enterprises are progressively increasing. The production technologies are improving, and product innovation and diversification are developing. Consequently product quality is also improving. Sawnwood production and consumption have been decreasing slightly over the last 25 years, mainly because of the substitution of solid sawnwood by various wood-based panels and engineered wood products as well as by

GRAPH 4.5.1

Sawnwood production and consumption in Turkey, 1993-2002

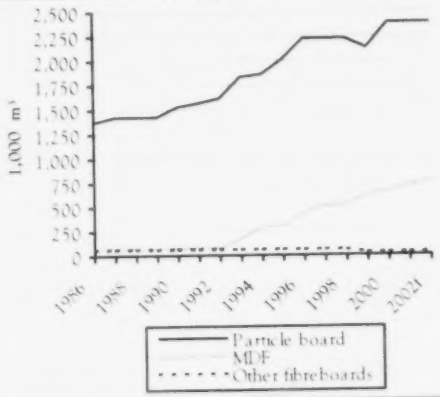


Note: f = forecast.
Source: General Directorate of Forestry, 2002.

non-wood substitutes (graph 4.5.1). The majority of the sawmills, which is the oldest and the largest sub-sector of the industry, are small enterprises, generally established in rural areas. Owing to the fact that these small craftwork enterprises are in operation only in certain periods of the year, their capacity utilization rates are extremely low. The remaining part of this branch consists of medium-sized enterprises, which have more advanced technology. Some of these enterprises are integrated with the other branches of the wood industry, for example the furniture industry. The number of large-scale multinational companies in this industrial branch is quite limited.

GRAPH 4.5.2

Production capacity of panel industry in Turkey, 1986-2002



Note: f = forecast.
Source: Particle board and Fibreboard Producer Association, 2002.

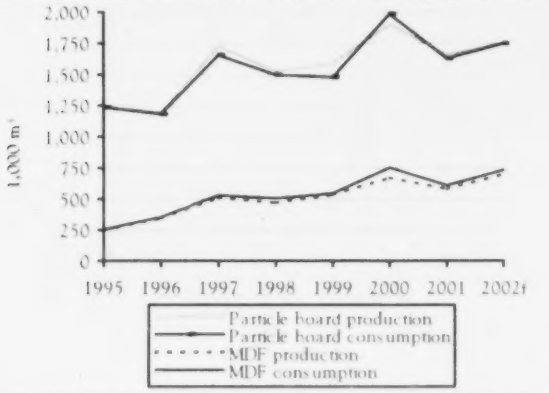
4.5.2 *Wood-based panel industry*

After a steady growth until 1996, the panel industry, which is dominated by particle board, has slowed down (graph 4.5.2). Nevertheless, investments in new capacity are continuing along with rationalization and consolidation. The sector's exports are insignificant and production is oriented towards the domestic market. Particle board capacity increased fast between 1989 and 1996, but it has had over-capacity since. Consequently, competition within the domestic particle board market is very strong. Particle board production and consumption have shown similar growth trends (graph 4.5.3) and reached 2 million m³ in 2000. While demand and supply are increasing, there is considerable fluctuation depending on general economic conditions.

The last economic crisis affected the panel sector strongly, as well as all other wood industry branches, with the exception of MDF. In 2001, 9 out of 24 particle board plants stopped production and 2 reduced significantly. Therefore, almost 400,000 m³ production capacity was kept out of production. According to certificates granting tax or other incentives to investors, and interviews of company representatives, a

GRAPH 4.5.3

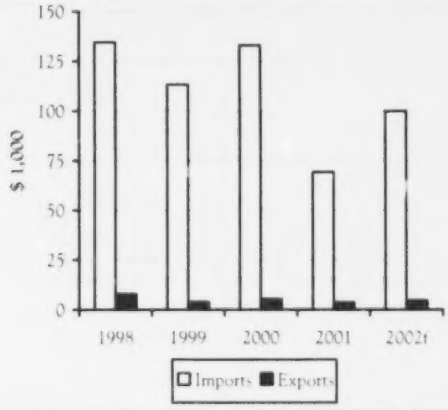
Particle board and MDF production and consumption in Turkey, 1995-2002



Note: f = forecast.
Source: Particle board and Fibreboard Producer Association, 2002.

GRAPH 4.6.1

Roundwood imports and exports in Turkey, 1998-2002



Note: f = forecast.
Source: General Directorate of Forestry, 2002.

25% growth is foreseen in the particle board industry by 2005.

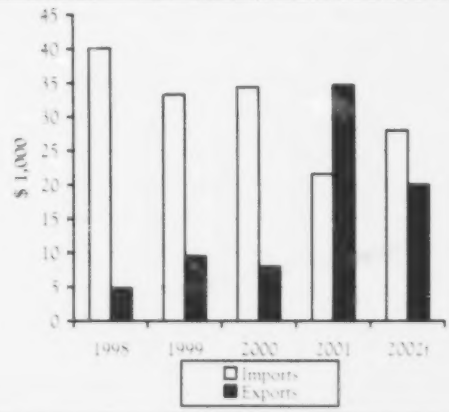
The MDF sector is extremely active and has large growth potential. In spite of frequent economic crisis, the demand and production have been increasing dramatically without interruption (graphs 4.5.2 and 4.5.3). According to continuing investments and government certificates granting incentives to investors, MDF capacity is forecast to reach 1.3 million m³, nearly a 100% increase by 2005. Other fibreboard production is insignificant and no expansion is foreseen. One of three plants was closed in 1999. Fibreboard production is about 25,000 m³ annually. There are 21 enterprises with a 114,000 m³ production capacity in the plywood industry. Production of about 60,000 m³ of plywood annually is decreasing, whereas imports are increasing. Consumption is still high, despite substitution by other wood products. Veneer has similar production, consumption and trade features as plywood.

4.6 Foreign trade of wood products

Turkey is a net importer of roundwood, primary-processed wood products and some secondary-or further-processed wood products (graph 4.6.1-4.6.4). While the share of raw material and intermediate goods import in total wood foreign trade is very high, the imports share is decreasing in favour of value-added goods. Imports and exports volumes and values are nearly equal for some value-added products.

GRAPH 4.6.2

Sawnwood imports and exports in Turkey, 1998-2002

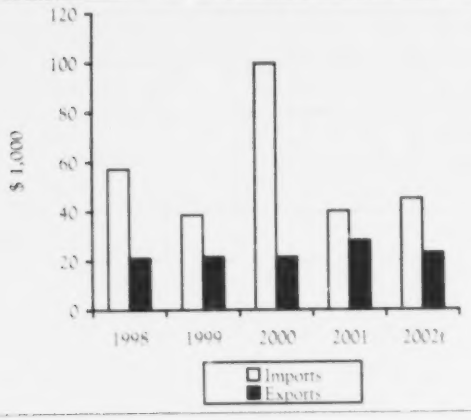


Note: f = forecast.
Source: General Directorate of Forestry, 2002.

From another viewpoint, imports are composed mainly of roundwood and sawnwood, while exports are composed mostly of further-processed wood products. In other words, Turkey is adding value to both imported and domestic raw materials before exporting. The major portion of exported products is based on domestic raw materials. The shares of roundwood and sawnwood in total import value are 53% and 14% respectively.

GRAPH 4.6.3

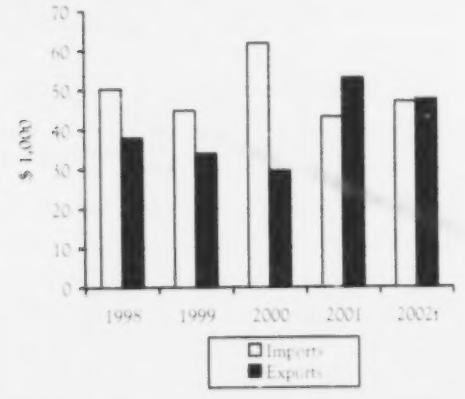
Panels imports and exports in Turkey, 1998-2002



Note: f = forecast.
Source : General Directorate of Forestry, 2002.

GRAPH 4.6.4

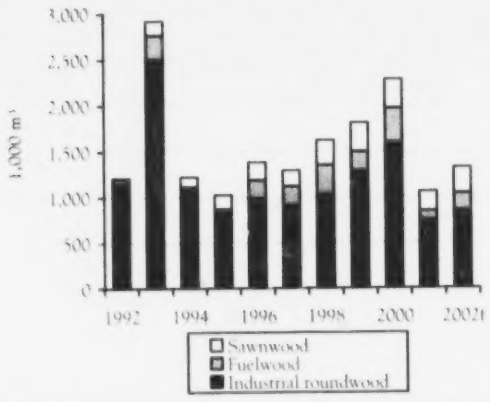
Value-added product trade in Turkey, 1998-2002



Note: f = forecast.
Source: General Directorate of Forestry, 2002.

GRAPH 4.6.5

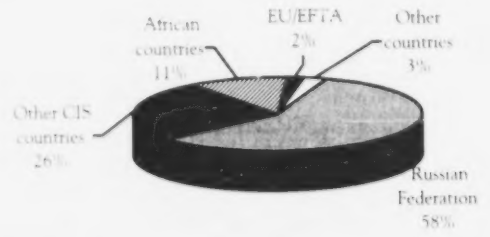
Roundwood and sawnwood imports in Turkey, 1992-2002



Note: f = forecast.
Source: General Directorate of Forestry, 2002.

GRAPH 4.6.6

Industrial roundwood import sources in Turkey, 2000



Source: General Directorate of Forestry, 2002.

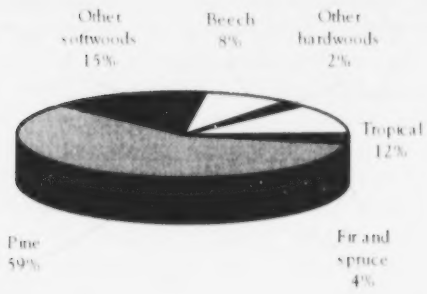
Roundwood import volumes peaked in 1993 as a result of the removal of tariffs, which were about 22% per cent of the wood price (graph 4.6.5). After a sharp decrease, imports rose unsteadily and reached 2 million m³ in 2000 as a result of an over-valued Turkish lira and active domestic wood demand. After rising to the second highest level, imports decreased sharply again by nearly 50% in 2001 owing to the weakening of the Turkish lira and the economic crisis. The main sources of roundwood imports are the Russian Federation and other CIS countries (graph 4.6.6). The main tree species imported are pine, beech, fir and spruce, plus tropical species (graph 4.6.7). Roundwood exports are insignificant. Sawnwood export volumes ranged between 40,000 and 160,000 m³, varying with currency fluctuations and domestic market demand. The significant increases of roundwood and sawnwood import volumes are not reflected in import values because of a sharp decline in import prices in recent years.

4.7 Wood furniture

Wood furniture is manufactured mainly by small enterprises, but the number of medium-scale enterprises is increasing. Currently there are

GRAPH 4.6.7

Industrial roundwood imports in Turkey by species, 2000



Source: General Directorate of Forestry, 2002.

approximately 60,000 enterprises, of which only 9 are multinationals. The market share of retail chain stores is small. However, demand for reliable, high quality, standardized products is increasing dramatically. Rapid population increase, fast urbanization and transformation of consumption patterns are considerable advantages for the sector. However, both production and consumption have shown flat trends, with few fluctuations since 1996 (table 4.7.1). The main factors adversely affecting demand are the contraction of the construction sector and reduced confidence of consumers owing to abnormal fluctuations in the financial market, as well as the economic crisis witnessed frequently in recent years. In fact, consumption of furniture is extremely sensitive to consumer confidence because intended purchases can almost always be cancelled or postponed if necessary.

TABLE 4.7.1

Wood furniture production and trade in Turkey, 1996-2001

($1,000)

	Production (at 1998 constant prices)	*Imports*	*Exports*
		(at current prices)	
1996	1 135	125 384	74 960
1997	1 201	158 367	78 479
1998	1 147	175 218	97 357
1999	1 125	145 654	127 663
2000	1 217	182 745	163 923
2001	930	111 947	180 346

Sources: Production: State Planning Organization, 2002, and Trade Center Anatolian Exporters Union, 2002.

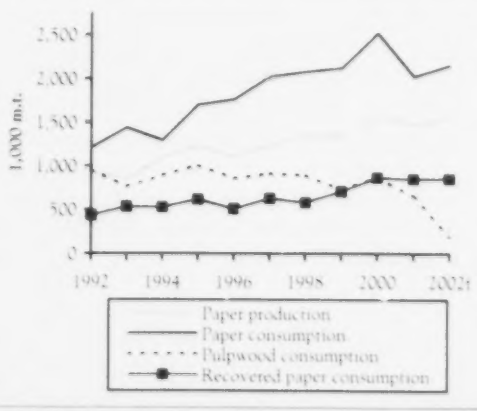
In spite of the current slight recession, technological development and product promotion are continuing in the sector. Both imports and exports are increasing rapidly, but the rate of export increase is greater than import increase (table 4.7.1).

4.8 Paper industry

The paper industry is one of the fastest growing sectors of the Turkish economy. The sector has 36 paper and paperboard plants of which 5 are owned by the State, 4 by multinational companies and the rest by the domestic private sector. The production share of State-owned mills, currently about 25%, is decreasing. The production technologies of State-owned plants are quite old and no significant renovation has occurred in recent years. On the contrary, in private plants technological renovation, rationalization and consolidation are continuing along with new investments. Privatization began in 1998, but could not reach the objectives because of inappropriate economic conditions both domestically and globally. Privatization is adversely influencing profits and preventing development of those plants owned by the State. In spite of the drawbacks of the State-owned side, the sector is developing rapidly. Paper and paperboard production increased by 66%, from 0.9 million tons in 1992 to 1.6 million tons in 2000. In the same period, consumption more than doubled from 1.2 million to 2.5 million tons. The sector still has great growth potential particularly on account of growth in demand for paper and paperboard. The present level of consumption per capita is low at about 38 kilograms per year.

GRAPH 4.8.1

Paper industry indicators in Turkey, 1992-2002



Note: f = forecast.
Source: Turkish Paper and Paperboard Industries Foundation, 2002.

Despite the high growth rate in paper and paperboard demand, no significant improvement has been observed in the wood pulp industry, the greatest share of which is still owned by the State. The production capacity of all types of wood pulp is about 470,000 tons. Annual pulpwood consumption ranges between 1.1 and 1.5 million tons and is decreasing slightly along with a decrease in capacity usage. No significant developments are expected in the pulp industry in the near future.

4.9 Prospects for Turkey's wood markets

Success of the current economic programme will be a vital factor for the development of the wood industry and markets. Likewise, construction sector performance will be the determining factor for the wood markets. Residential and non-residential building construction has been under pressure of economic uncertainty, high interest rates and fluctuations in money markets over the last decade. Meanwhile, housing shortages have increased significantly and there are some signs indicating that the recession is about to end. Forecasts and expectations about wood markets and industries can be summarized as follows:

- A steady and strong growth period is forecast for construction, but it depends on economic stability. Growth could be strengthened by providing long-term credit with reasonable interest rates.
- Furniture demand has been under pressure of economic uncertainty and the recession in construction for a long time. Therefore, a sharp increase in demand can be expected depending on consumer confidence and recovery of construction. On the other hand, technological development, product promotion and an increase in the number of larger enterprises in the sector are certain to continue.
- The steady increase in demand and production of paper and paperboard is expected to continue. On the contrary, no improvement is expected for the wood pulp industry. Privatization and technological renovation after privatization seem to be taking time. These processes will continue to adversely effect wood pulp production and pulpwood consumption.
- Capital investments are expected to continue from Turkish investors from the forest products sector to develop wood industries in the CIS and other countries, particularly Bulgaria and Romania. Technological development, transition to larger-scale enterprises and product promotions and renovations are expected to continue in all wood industries. However, a slight decrease of production and consumption is forecast for sawlogs, veneer and plywood because of wood substitution. Pallets and packing industry are expected to increase in parallel with general industrial and trade development. Flooring and new housing construction are forecasted to be more active.
- Expansion of the particle board industry is likely to continue and new OSB plants are expected to be established in the near future. The strong progressive increase of MDF demand and fast growth of MDF industry are forecast to continue and production is forecasted to double by 2005.
- The decreasing pulpwood demand by industry seems to be balanced by increasing pulpwood consumption by the wood-based panel industry. The slightly increasing trend of industrial roundwood demand and supply are forecast to continue.
- Further price drops are not forecast in the roundwood and processed wood markets. On the contrary, some price increases are expected in these sectors; in particular, log prices are expected to rise steadily in the coming years.
- Continuous, dramatic price decreases, which were witnessed during the last decade, also seem to have affected industrial wood production by the private sector. Thus, industrial roundwood production and supply by the private sector are expected to slow down in the near future.
- The decrease in fuelwood consumption and production trends is predicted to continue.

Chapter 5
Chile's forest products markets—a plantation success story[1]

Highlights

- Since the 1950s when Chile introduced large commercial plantations of radiata pine and eucalyptus, which span over 2 million hectares today, dependency on the native hardwoods has decreased dramatically.
- Roundwood production from plantation radiata pine is expected to double to 37 million m^3 in 15 years. With log exports being minor, 41% of harvest in 2001 was processed into sawnwood, 31% into pulp and the balance used for structural and non-structural panels.
- Eucalyptus is increasing increasingly upgraded into solid wood applications rather than its traditional uses for firewood and pulp.
- Approximately 75% of the production of primary (pulp, paper, panels and sawnwood) and secondary products (engineered wood products, doors, windows, interior finish items and furniture and furniture components) is exported, mainly to the United States, followed by Japan and China, respectively.
- Over the last decade, wood products exports, worth $2.2 billion, have more than doubled, mainly as a result of the six-fold increase in value of further-processed wood products exports.
- Forest products exports constitute 13% of Chile's total exports today by value.
- Imports of wood products into Chile are already significant, at almost $540 million in 2001, and with expectations for continued GDP per capita growth, imports of paper, millwork and furniture are expected to increase.
- All of the plantation forests in Chile are privately owned, and with high industry concentration.
- There is a growing trend for Chilean forest product companies to invest their capital in other Latin American countries, including plantations, manufacturing facilities, and sales offices.
- Over 50% of Chile's plantation forests are managed with an environmental management system complying with ISO 14001, with the area growing steadily.

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Secretariat introduction

Chile's rapidly expanding forest products trade is influencing markets within the UNECE region, as well as competing for market share in some of the same export markets. Despite growing domestic consumption, with softwood and hardwood plantation-grown wood that will double in volume in the next 15 years, Chile will become an even greater player in world markets. Chile is not the only country in the southern hemisphere to benefit from fast-growing plantations, as more countries' forest resources are based on planted stock. However, Chile has capitalized on its raw material by simultaneously developing a forest products industry to manufacture both primary and further-processed products.

This chapter is one of a continuing series of special chapters in the Review that features a country's wood products markets, either a trading partner or a competitor, from outside the UNECE region. The *Forest Products Annual Market Review, 1999-2000* featured a similar chapter on New Zealand's forest products markets.

The secretariat would like to express sincere appreciation to Mr. David Cartwright, Forestry Consultant and Special Advisor to the Canadian Council of Forest Industries and Dr. Christopher Gaston, Group Leader, Markets & Economics, Forintek Canada Corporation, for this insightful chapter on Chile's forest products sector. Dr. Gaston is the Leader of the new UNECE and FAO Team of Specialists on Forest Products Markets and Marketing.

5.1 Introduction

Chile's forest industry has experienced dynamic development during the past thirty years. In 1974, a re-activated Government-led programme provided incentives that resulted in the establishment of two million hectares of plantation forests, primarily radiata pine and eucalyptus. An integrated industrial infrastructure has been developed to process the raw material resulting from these plantations, developing Chile into a significant exporter of a wide range of wood products to numerous markets around the globe. Chile is a true success story in fibre production, processing both primary and secondary wood products of generally high quality. The Chilean forest industry has established a highly successful worldwide marketing network, and is starting to make investments in processing facilities outside of the country. With the 2001 plantation production of roughly 25 million m³ of roundwood, and expectations for this to nearly double in the next two decades, Chile is positioned to be an even greater global supplier of forest products.

At the same time, economic growth and the prosperity of the Chilean population poises them to become significant importers of wood products. While to date this has been dominated by paper, there are growing opportunities for imports of solid wood products, especially for interior finish of principal and recreational housing.

5.2 General economic developments

The population of Chile is nearing 15 million people, 28% of which are 14 years of age or younger. The population growth rate is 1.2% and life expectancy at birth is 75.5 years. The literacy rate for the total population 15 years and older is 95.2%.

During the 1991 to 1997 period the growth in real GDP averaged more than 7% annually but dropped to 3% in 2001. It is forecast to increase slightly in 2002 to 3.3%. The export of goods and services in 2001 experienced a 7.1% growth rate in real terms, slightly below the previous year's rate of 7.5%. In 2002 the forecast is for a 4.2% growth rate (Central Bank of Chile, 2002). In 2000, at $10,100, Chile had a respectable purchase power parity adjusted per capita GDP (compared, for example with $6,700 for Costa Rica, $6,500 for Brazil, $2,900 for Ecuador, and $23,400 for Germany) (United States Central Intelligence Agency, 2001).

The annual rate of inflation dropped from 6% in 1997 to 2.6% in 2001. It is forecast to remain low in 2002. During most of the 1990s Chile's unemployment rate remained low averaging about 7%. In February 2002 the unemployment rate had climbed to 9.3% countrywide, and to 13.3% in the Santiago metropolitan region, a reflection of the downturn in the construction sector. This is due in part to depressed global commodity prices and the slowdowns in the Asian economies.

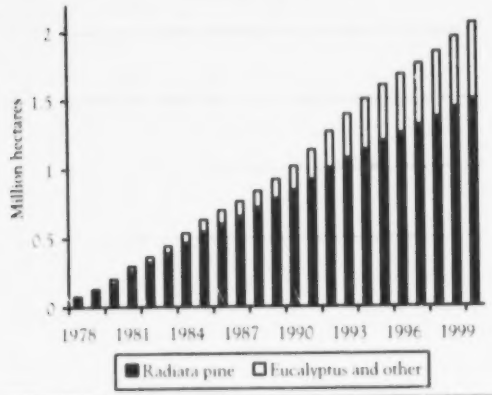
5.3 Forest resources

Chile's temperate forests remained almost intact until the arrival of the Europeans over 450 years ago. The uncontrolled use of fire to clear land for agricultural uses and the harvesting of the more valuable native softwoods and hardwoods have reduced the original forest cover by 44%. Fibre use until quite recently has primarily been for firewood and for sawnwood manufacture for use in construction, shipping and mining.

Today Chile has 15.6 million hectares of forest cover (approximately one fifth of the county's total area), with native forests representing 85.9% (13.4 million hectares) and plantation forests accounting for 13.5% (2.1 million hectares). There is an additional

GRAPH 5.3.1

Cumulative plantation area in Chile, 1978-2000



Source: Instituto Forestal, 2001.

14.1 million hectares of scrub forestlands that are Government-owned and protected (*Instituto Forestal*).

The dependency on the natural hardwoods decreased dramatically with the introduction of plantation forests in the mid-1900s, utilizing introduced species, primarily radiata pine and eucalyptus. In the mid-1970s, this trend toward plantation forestry accelerated through government subsidized planting programmes (graph 5.3.1). This peaked in 1992, with over 130,000 hectares planted that year. To date, Chile has over 2 million hectares of plantation forests exist. Plantation subsidies have been curtailed significantly. No subsidies exist for processing of wood products.

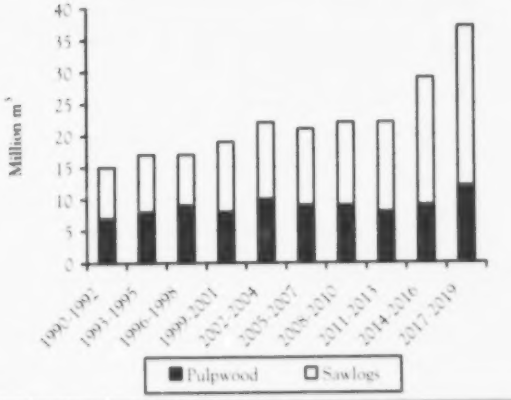
Radiata pine has been the preferred plantation species primarily due to its fast growth rate, averaging 24 m³/hectare/year (*Instituto Forestal*). It also tends to grow straight and tall with well-spaced, small-sized branches. This species currently represents over 75% of the area planted. Based on established plantation inventories, age classes and annual increments, radiata pine timber production is forecast to increase substantially from an annual harvest of 18.8 million m³ today to an estimated harvest of 36.9 million m³ in 2018 (graph 5.3.2) (*Instituto Forestal*). There is, however, a growing interest in faster growing species of eucalyptus that could begin to lessen the dependence on radiata pine. The eucalyptus wood is expected to be used for both high quality, short fibre pulp and wood-based products.

Industrial log consumption has experienced a five-fold increase during the past 25 years, from less than 5 million m³ in 1976, to over 25 million m³ today. Plantation forests account for 85% of this supply, with native forests supplying only 15% of the industrial log harvest. Approximately 41% of the industrial log production is processed by the sawmilling sector with 31% destined to the pulp mills, mainly in the form of undersized roundwood resulting from thinning operations. The balance is primarily used for structural and non-structural wood-based panels.

It is of interest to note that an additional 10 million m³ of wood, equivalent to 40% of the roundwood production, is extracted annually from the forests for use as firewood. The preference is for certain hardwoods from native forests. This often uncontrolled extraction of firewood can cause significant degradation to the mature as well as second growth native forests.

GRAPH 5.3.2

Past, present and projected radiata pine roundwood production, 1990-2020



Source: Instituto Forestal, 2002.

5.4 Institutional framework for forest and wood industries

The majority of the plantation resources in Chile are privately owned. Large owners (six in total, each holding in excess of 5,000 hectares of plantation forests) account for 51% of the total acreage of plantation forests. Medium-sized owners, each holding between 1,000 and 5,000 hectares, represent 15% of the plantation forests (1,100 firms), with the balance owned by small operators (5,400 firms). Native forests are largely owned by the Government and are either very strictly managed for use or totally protected. However, almost 20% of the native forests are owned privately, and managed under strict harvesting guidelines.

Chilean forest policies are implemented through various institutions. The principal public institution is the Corporación Nacional Forestal (CONAF) and its

role is to encourage the growth and development of productive forestry activities while protecting and conserving the forests and the forest environment. The Instituto Forestal's (INFOR) objective is to develop the forest industry by providing factual statistical and analytical information about resources, industrial activities, products and markets. The Comisión Nacional del Medio Ambiente (CONAMA) is responsible for environmental issues and the development of a comprehensive national environmental law. The Corporación Chilena de la Madera (CORMA) is the Chilean wood corporation that represents the private sector forest product producers.

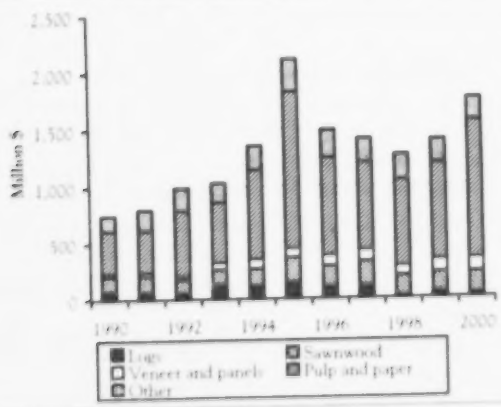
A rising interest in, and concern for, the protection of the environment has resulted in increased controls over the harvesting of native forests. This has delayed implementation of some industrial projects, including chipping and sawmilling operations, reliant on the native hardwood species and has slowed the establishment of plantation forests using introduced species that replace native species.

5.5 Wood industry - production and consumption

Chile's forest industry produces a wide range of wood products, primarily from their radiata pine and eucalyptus plantations, for both export and domestic markets (graphs 5.5.1 and 5.5.2). The sawmilling sector is characterized by the existence of a large number of small sawmills, many owners and wide spatial distribution. However, there is a high concentration of milling capacity in the hands of a few companies. The principal companies are Aserraderos Arauco S.A., Aserraderos Mininco S.A., Andinos S.A. and Forestal Copihue. It should be noted that there is a low level of foreign investment in both Chile's plantation resources and its processing facilities.

GRAPH 5.5.1

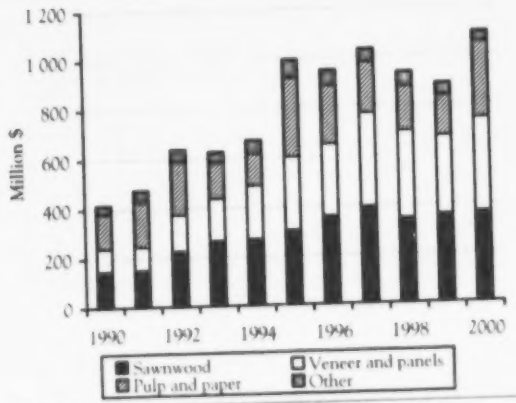
Chilean production of primary forest products for export markets, 1990-2000



Source: Instituto Forestal, 2001.

GRAPH 5.5.2

Chilean production of primary forest products for domestic use, 1990-2000



Source: Instituto Forestal, 2001.

The veneer and plywood industry has undergone significant growth during the past decade as plants have been modernized, facilities have been expanded and new investment made in this sector. Current capacity is 50% particle board, 35% fibreboard (primarily MDF), 10% plywood and 5% veneer production.

Wood chips are produced for the domestic and export market. Most chipping facilities are attached to sawmills processing radiata pine logs and account for 48% of total chip production. Native species account for 39%, with eucalyptus representing the balance, or 13% of total production. About $135 million of chips are exported annually.

The pulp and paper industry is well developed and produces chemical and mechanical pulp, newsprint and other papers (printing, sanitary, facial, corrugated cardboard and cardboard). Six companies account for 87% of installed capacity of approximately three million tons per annum.

In addition to these primary processors there is a well-established secondary manufacturing industrial base that produces a wide range of value-added products. These range from the basic kiln-dried, finger-jointed blanks to mouldings, doors, windows, and numerous items of furniture. Growth in the production of such value-added products has far outstripped the growth in primary wood products (see section 5.6).

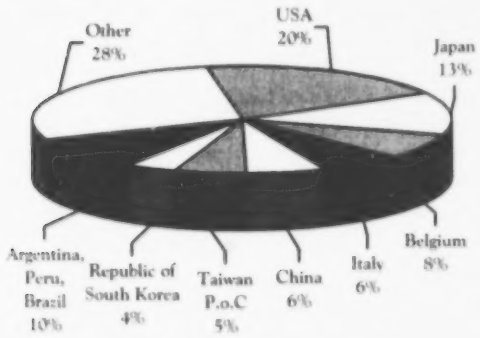
5.6 Trade of wood and wood products

5.6.1 *Wood product exports*

The growth of Chile's forest industry over the past three decades has depended on the development of foreign markets (graph 5.6.1). Since 1990 the value of forest product exports has more than doubled, reaching $2,200 million in 2001, representing 13% of the country's total exports (graph 5.6.2). The value of forest products exports peaked in 1995 at $2,369 million due largely to the high world prices for wood pulp, particularly during the third quarter of that year. Non-wood forest products exports have also doubled; these include herbs, edible nuts, bark, mushrooms, extracts and essential oils, bamboo poles and charcoal.

GRAPH 5.6.1

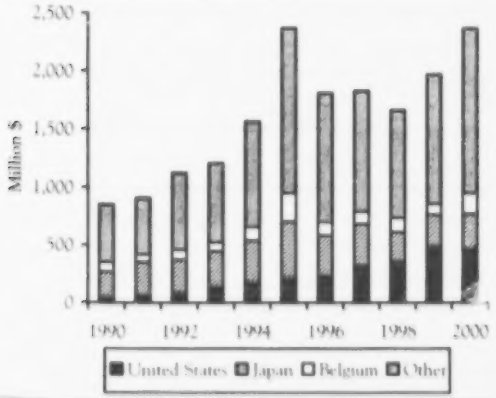
Chilean forest products export destination, 2000



Source: Instituto Forestal, 2002.

GRAPH 5.6.2

Chilean forest products exports by destination, 1990-2000

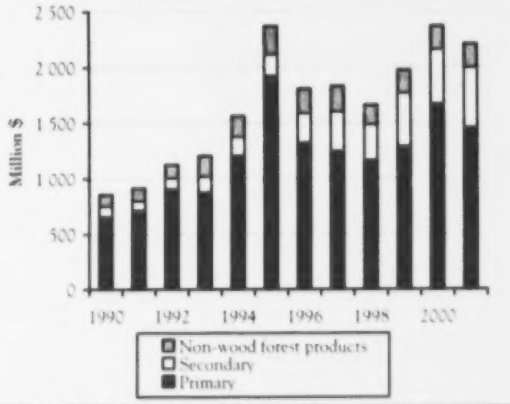


Source: Instituto Forestal, 2002.

While primary wood products account for the largest percentage of the value of exports, the volume and value of secondary value-added wood products is steadily increasing as a percentage of the total. During the past eleven years the value of primary wood product exports has doubled while that of value-added wood products has grown six-fold (graph 5.6.3).

GRAPH 5.6.3

Chilean exports of forest products, 1990-2001



Note: Other is non-wood forest products.
Source: Instituto Forestal, 2002.

Also during the past eleven years the number of exporters, products exported and countries exported to have all experienced moderate growth. The value of exports has, on the other hand, more than doubled (table 5.6.1). Pulp is the largest export item, representing roughly 40% of all wood product exports. The balance includes sawnwood and a wide variety of further-processed products.

TABLE 5.6.1

Diversification of forest product exports and exporters, 1991, 1996 and 2001

	1991	*1996*	*2001*
Value of exports (million $)	913	1 808	2 206
Number of exporters	670	942	968
Number of products exported	385	420	407
Number of countries exported to	76	89	98

Source: Instituto Forestal, 2002.

The United States remains the principal destination for Chile's wood exports, accounting in 2001 for 23.2% of the value of total wood product exports. Japan and China with 12.5% and 10.9%, respectively, follow in importance.

It is important to note that there is a significant difference in terms of the wood products that each of the four principal importing countries purchase (table 5.6.2). The United States imports primarily value-added radiata pine wood products, namely moldings, planed wood, and doors and doorframes. The principal product exported to Japan is eucalyptus wood chips, while China imports primarily softwood pulp. Exports to Mexico have experienced a significant increase in the last three years, primarily plywood, sawnwood, planed wood and multi-layered paperboard.

5.6.2 *Wood products imports*

Imports of wood products in 2001 totalled $536 million. 73% of imports were paper, followed by solid wood and manufactured wood products at 13% (table 5.6.3).

TABLE 5.6.2

Wood products exported to the principal markets, 2001

(Million $)

Country and imported product	*2001*	*%*
United States		
Solid wood moldings	127.4	24.9
Planed wood	62.3	12.2
Door jambs	46.4	9.1
Wood furniture	41.9	8.2
MDF moldings	39.1	7.6
Other	195.0	38.0
Total	**512.0**	100.0
Japan		
Eucalyptus wood chips	148.1	53.9
Sawnwood	48.4	17.6
Bleached pulp	37.5	13.7
MDF panels	6.0	2.2
Other	34.5	12.6
Total	**274.7**	100.0
China		
Bleached pulp	176.8	73.4
Raw pulp	57.6	23.9
Sawnwood	3.5	1.5
Planed wood	2.3	0.9
Other	0.9	0.3
Total	**241.0**	100.0
Mexico		
Plywood	17.1	18.1
Sawnwood	16.9	17.9
Planed wood	15.0	15.9
Paperboard	10.3	10.8
Other	35.3	37.3
Total	**94.6**	100.0

Source: Instituto Forestal, 2002.

The relationship between the value of imports and the value of exports of wood products has changed during the past decade. In 1990 for each dollar of wood products imported, Chile exported $6.9. In 2001 this had decreased to $4.1. The trend is more noticeable in the value-added sector, particularly wood furniture. In 1990 for each dollar imported, $11.8 were exported. This has dropped to $2 in 2001 reflecting increase purchasing power in the country and generally depressed global prices for forest products (graph 5.6.4).

5.7 Certified forest products

Some progress has been made to develop a national standard of sustainable forest management, primarily for the native hardwood forests. Efforts have been compatible with both the Forest Stewardship Council and Sustainable Forestry Initiative programme.

Commencing five years ago a few Chilean forest companies, reacting to market conditions, began the process that would result in the certification of their plantation forests. As of January 2002, nine forest companies and two wood-processing firms have obtained ISO 14001 certification. Slightly over one million hectares have been certified. By the end of 2002 it is forecast that an additional four companies will have secured certification on an additional 51 thousand hectares of plantations. This will represent approximately 60% of the country's plantation forests.

At this time five companies have obtained chain of custody certification and the right to use eco-labels on their products. FSC is at this time the preferred chain of custody certification.

During the past ten years a few foreign citizens and companies have purchased significant parcels of native forestlands located in the southern regions of the country. One investor has assembled a block that covers an area of over 360,000 hectares that spans the width of the country. It is the owner's professed desire to retain this area in its pristine condition and prohibit any form of farming, road construction, installation of electricity generating plants or other forms of development on the land that he controls or the adjacent waters.

TABLE 5.6.3

Wood products imports, 1990 – 2001

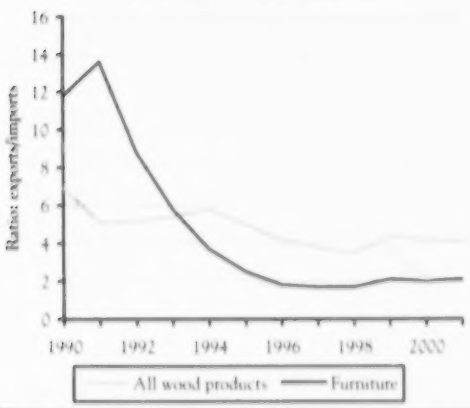
(Million $)

Year	*Paper and paperboard products*	*Wood and wood products*	*Cork and cork products*	*Furniture and furniture parts*	*Cellulose*	*Total*
1990	109.2	6.4	5.3	1.0	2.7	124.7
1991	161.9	7.0	7.1	1.6	2.3	180.1
1992	196.1	10.0	10.0	2.7	0.8	220.0
1993	194.9	17.0	9.8	5.3	0.7	228.3
1994	235.5	17.8	8.9	9.4	1.6	274.1
1995	407.3	27.5	12.3	13.3	9.5	471.3
1996	342.0	36.3	17.9	21.0	3.0	422.1
1997	392.1	50.1	24.5	33.2	3.7	505.4
1998	385.1	51.6	27.5	33.7	4.6	503.9
1999	338.9	39.7	29.1	23.6	7.2	439.9
2000	411.5	56.2	29.3	25.9	17.7	542.2
2001	393.6	67.2	31.2	22.8	19.5	536.3

Source: Central Bank of Chile, 2002.

GRAPH 5.6.4

Relationship of wood product imports to exports in Chile, 1990-2001



Note: $ exported per $ imported
Source: Instituto Forestal, 2002.

5.8 Prospects for the future of the Chilean wood industry

Experimentation with fast-growing introduced hardwoods, primarily eucalyptus, has borne positive results. There is a growing trend towards the establishment of plantations that could outperform radiata pine and provide the industry with an increased volume of high quality fibre as well as saw or veneer logs within 14 years of plantation establishment.

There are two trends points worth noting, particularly among the larger forest product companies in Chile. First, the level of horizontal integration is high, from nursery operations, harvesting, log merchandizing, sawmilling, value-added manufacturing and through to marketing and sales. Second, there has been a large investment in technology in all aspects of their operations, substituting capital for increasing labour costs. Both of these trends can be expected to continue.

Another significant trend warranting observation is the investment that Chilean forest companies have made in other Latin American countries. The recent signing of various free trade agreements with Central American countries, including Costa Rica, has resulted in the establishment of offices in some of these countries to direct market Chilean wood products. The free trade agreement signed with Mexico has resulted in a strategic alliance entered into by Terranova Internacional with Maderas y Sintéticos de México (an affiliate of the Chilean company Masisa) to form Masnova de México. Masnova will market Chilean MDF products. Muebles Sur S.A., a Chilean furniture manufacturer, in 2001 opened a retail outlet in Mexico to direct market its products.

In 2001 Masisa purchased MacMillan Guadiana, a Mexican waferboard manufacturer and affiliate of Weyerhaeuser, and started up an OSB plant in Brazil. In that same year the Terranova Group purchased a large acreage of plantation forests in Brazil and Venezuela, investments that totalled approximately $40 million. Terranova has now purchased Masisa for $150 million.

The Arauco Group has a large investment portfolio in Argentina that includes MDF plants that, when combined with their plants in Chile, gives this company an annual production capacity of over one million m^3 situating it as a significant global producer.

5.9 Conclusion

Chile has clearly proven itself to be a fibre supply success story. Through past incentives to establish impressive plantations, Chile has all but eliminated its reliance on native forests. Moreover, from resource to international markets, the Chilean wood products industry has implemented a supply chain management scheme that could be a model for any country. It can be expected that Chile will continue to grow in importance as a world wood products supplier, contributing to the global trend of an increased reliance on southern hemisphere plantations.

5.10 References

Indicadores Económicos. Central Bank of Chile, 2002 www.bcentral.cl/indicadores/indicadores.htm

ISO 14001 en el área forestal: un millón de hectáreas de bosques certificados. Unpublished manuscript, Corporación Chilena de la Madera, 2002.

Estadísticas Forestales 2000. Instituto Forestal, 2001.

Exportaciones Forestales Chilenas. Instituto Forestal, March 2002.

Ignacio Cerda V. *Trayectoria del Sector Forestal Chileno: sus Logros y Desafíos*. Instituto Forestal, 1998.

Neira, H., Verscheure, H. and Revenga, C. *Chile's Frontier Forests: Conserving a Global Treasure*, 2002.

The World Factbook, 2002. United States Central Intelligence Agency, 2002.

Chapter 6
Market in Europe recovering from storm damage, but declining in North America

Wood raw material – production, trade and consumption[1]

Highlights

- European roundwood markets continued to incur supply aberrations in 2001 from the extensive oversupply generated following the devastating windthrow from the December 1999 storms, which mainly affected France, Germany, Switzerland and Denmark.
- The 1999 storms' aftermath left these effects on roundwood markets in the EU/EFTA subregion in 2001 following exceptional oversupply in 2000: a 10% decrease in removals (following the 11% increase from the storms in 2000), a 14% drop in exports and weak prices.
- European forest owners reduced their supply in 2001, in part due to shattered roundwood prices from the storm-generated oversupply, which created some supply shortages.
- Only the CIS subregion increased removals in 2001 in line with a 20% increase in exports.
- Export unit prices for Russian exports increased by 5% in 2001, the first rise since 1996, signalling strong demand and possibly future export volume increases.
- Following a 10% increase in 2000, consumption of roundwood decreased by over 2% in Russia in 2001.
- In line with reduced production of primary products, United States roundwood production decreased by 20 million m^3 in 2001, and prices weakened.
- The biofuel trade, including wood pellets, briquettes, sawdust and chips, has increased rapidly in Europe over the past ten years, in large part spurred by favourable energy policies and technological developments.

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Secretariat introduction

This chapter analyses the market developments for wood raw materials, specifically roundwood, chips and residues which are usually processed further into the products in the following chapters, i.e., sawnwood, panels, wood pulp and eventually secondary-processed wood products. In preparation for the Timber Committee market discussion on wood fuel trade, a special section on this has been included. The secretariat thanks Dr. Riitta Hänninen, Forest Economics Researcher, Finnish Forest Research Institute for this chapter's analysis of wood raw materials. This is the first time that Dr. Hänninen has written for the *Forest Products Annual Market* Review, and the secretariat also thanks her employer and colleagues for this work that launches the chapter. Part of her analysis is based on the statistical work and preliminary analysis by Dr. Volker Sasse, Forestry Officer, UNECE and FAO Timber Section.

6.1 Introduction

The UNECE region is the dominant global player in the production, trade and consumption of wood raw materials. The region, CIS, Europe and North America, produces two thirds of the world's industrial roundwood supply from its forests which account for 43% of the area of global forest resources. The region accounts for three fourths of the world's industrial roundwood exports, a majority of which are traded within the region as will be shown in the following subregional analysis.

Global roundwood production[1] reached 3.4 billion m^3 in 2000 (the most current year for world production), of which 1.5 billion was industrial roundwood. Therefore over half of the world's roundwood production, according to FAOSTAT on the basis of population data, was consumed as a fuel, either home in heating and cooking in developing countries or in commercial energy in industrialized countries.

The other division of roundwood is wood fuel (figure 6.1.1). Fuelwood consumption in 2000 was greatest for China, Indonesia and Brazil, which combined accounted for 29% of the world's total consumption, equal to 420 million m^3. The UNECE region accounted for 6% of the world's consumption of wood fuel in 2000.

TABLE 6.1.1

Global roundwood consumption, 2000

(% share of total 3.4 billion m^3)

Fuelwood (world)	57%
Developing countries	50%
Industrialized countries	7%
UNECE region	6%
Industrial wood in the rough	43%
Developing countries	9%
Industrialized countries	34%
UNECE region	32%

Note: Developed non-industrialised countries are not shown in the table.

Source: FAO, 2002.

The United States was the largest consumer of industrial roundwood, with 30% of the world's total, equal to nearly half a billion m^3 in 2000, falling to 477 million m^3 in 2001.

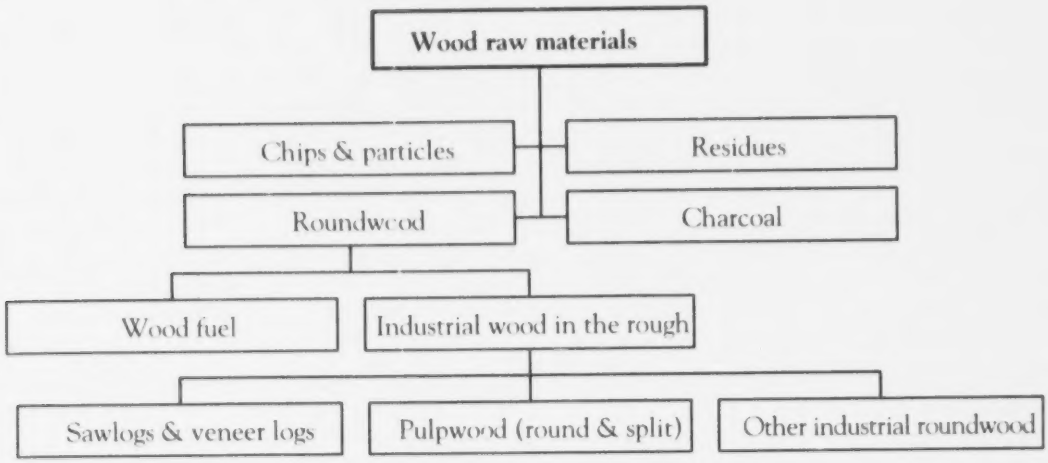
China, which currently consumes about 7% of the world's industrial roundwood, is rapidly increasing consumption. This is strongly affecting international roundwood trade as the demand cannot be met by domestic timber resources in the short term. Rising imports of wood raw materials are needed for conversion into both domestic and exported wood products. China's main import source of roundwood is Russia, and to a lesser amount, other CIS countries. Russia has increased export volumes to China from 1.6 million m^3 in 1998 to 10.2 million m^3 in 2001 (EUWID, 2002). China has accounted for 50% of the increase over the last 4 years. In 2001 the percentage increase of Russian roundwood exports to China was about 60%.

Despite being the largest producer and consumer, as a region the UNECE area forests will continue to produce a sustainable supply of roundwood. Net annual increment in forests available for wood supply is much higher than current harvests. The lack of consumption in comparison to net annual growth of forests is the main reason for an overproduction of wood fibre in the UNECE region. However there are also increasing environmental pressures on forests which affect harvests, especially in some countries, e.g. the United States. Harvesting rates differ between subregions depending on many factors, notably ownership, policy infrastructure, roundwood price, and harvesting costs, forest stand conditions and the accessibility of forests.

[1] The term "removals" is used to indicate roundwood, chips and residues produced in forests, and actually removed. This is as opposed to roundwood felled and stocked in forests for later removal and processing. This again became important following the 1999 windstorms in Europe which left significant volumes of roundwood stocked in forests, which were not counted as removals or production. Production is sometimes used as a synonym for removals. See forest products terminology in the annex.

FIGURE 6.1.1

Wood raw materials components



Source: UNECE and FAO forest products terminology, 2002.

The volume of wood fuel use jumped in the UNECE region recently, in part because of the windstorm-generated residues, and in part because of government incentives to increase biofuel use. As this development is influencing other traditional market channels for wood raw materials, it is detailed in the analysis below.

Analysis of some assortments of wood raw materials are challenging in today's manufacturing environment. A clear distinction between the types of roundwood products (logs, pulpwood, wood fuel and other industrial roundwood) no longer exists when pulpwood can be used as small-size sawlogs and vice versa. The choice of whether a particular log is processed into pulp, sawnwood or panels is often determined by the day's production needs in the immediate economic climate, rather than on only diameter and quality as in the past. It is for this reason that some subregion's trade classifications have lost the ability to identify between pulpwood, logs and other industrial roundwood. The FAO/ECE Working Party on Forest Economics and Statistics, in conjunction with the European Commission, CEI-Bois, APA-the Engineered Wood Association and other groups is working to regain the separation between logs and pulpwood in European trade classifications.

In part because of the difficulty in obtaining customs records for roundwood, and in part because of ineffective statistical collection and dissemination systems, not all 55 countries fully reported wood raw materials production and trade, necessitating secretariat estimations. This is no different than in the past, and is also true of other products in the Review. Where necessary, estimations are made to enable calculation of subregional totals, notably for Canada.

6.2 UNECE region developments

6.2.1 *Roundwood removals*

In 2001, approximately 1.2 billion m^3 of roundwood was produced in the UNECE region, which corresponds to less than 1 m^3 per hectare of forest area. This volume was down by 4% from 2000 (table 6.2.1). In Europe the largest drops of removals in 2001 were in the storm affected countries where fellings returned nearer to the levels prevailing before the devastating windstorms in December 1999. Principally because of the return to more normal harvest rates, the EU/EFTA subregion showed a 10.4% reduction in harvests. Removals in the "Other Europe" subregion remained nearly constant. In North America removals declined in 2001, by 3.0%, down to 658 million m^3, mainly due to a reduction in United States removals of 3.8%. This was the first decline since 1996 and was due to the slowdown in most primary products production, especially sawnwood, woodpulp and panels. The only subregion which gained production in 2001 was the CIS, based on a 2.7% increase by the Russian Federation, most of which went for export as domestic apparent consumption fell by 2.1%.

TABLE 6.2.1

Production of roundwood (removals) in the UNECE region, 1997-2001

(1,000 m^3)

	1997	1998	1999	2000	2001	Change 2000 to 2001 Volume	Change 2000 to 2001 %
EU/EFTA	266 042	266 941	275 099	305 013	273 339	-31 674	-10.4
of which:							
Sweden	60 200	60 600	58 700	64 820	64 920	100	0.2
Finland	51 798	53 660	53 637	54 262	52 210	-2 052	-3.8
France	34 932	35 527	43 008	45 828	38 805	-7 023	-15.3
Germany	38 207	39 052	37 634	53 710	37 672	-16 038	-29.9
Switzerland	4 288	4 276	4 736	9 238	5 000	-4 238	-45.9
Denmark	2 207	1 558	1 560	3 280	2 370	-910	-27.7
Other Europe	108 448	109 457	119 109	125 864	125 051	-812	-0.6
of which:							
Poland	21 635	23 107	24 268	26 025	25 268	-757	-2.9
Turkey	18 050	17 668	17 615	16 787	16 162	-625	-3.7
Czech Republic	13 491	13 991	14 203	14 441	14 374	-67	-0.5
Latvia	8 922	10 030	14 008	14 304	14 037	-267	-1.9
CIS	130 290	109 774	158 168	174 278	178 596	4 317	2.5
of which:							
Russian Federation	113 798	95 000	143 600	158 100	162 300	4 200	2.7
Ukraine	8 453	8 453	7 920	9 859	9 859	0	0.0
Belarus	7 585	5 902	6 561	6 136	6 273	137	2.2
North America	674 683	671 010	690 806	678 245	657 785	-20 460	-3.0
Canada	188 803	176 994	193 165	178 071	176 692	-1 379	-0.8
United States	485 880	494 016	497 641	500 174	481 093	-19 081	-3.8

Source: UNECE/FAO TIMBER database, 2002

TABLE 6.2.2

Cutting rates in the UNECE region, 1990s and 2001

Subregion	Removals[1], 1990s average Million m^3	Net annual increment[1] Million m^3	Cutting rate % 1990s	Removals[1] 2001 Million m^3	Cutting rate % 2001
EU/EFTA	265	497	53	273	55
Other Europe	86	165	52	125	76
CIS	192	793	24	179	23
North America	674	922	73	658	71

Note: [1]Removals are underbark. Net annual increment is overbark.

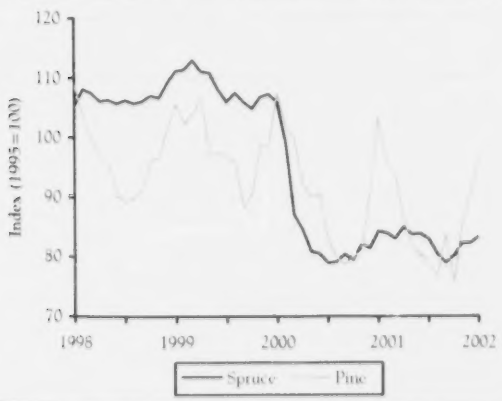
Sources: UNECE/FAO *Forest Resources of Europe, CIS, North-America, Australia, Japan and New Zealand*, 2000, UNECE/FAO TIMBER database, 2002.

Despite high rates of removals, sustainability of roundwood supply in the UNECE region as a whole, and in each of the subregions, is well maintained. The net annual increment in forests available for wood supply is much higher than current harvests, mainly due to economic reasons, but also increasing environmental demands from forests tend to affect harvests. Cutting rates (i.e. removals as a % of net annual increment) in the 1990s ranged from 24% in the CIS to 73% in North America (table 6.2.2). Cutting rates increased in 2001 in "Other Europe", to 76% from 52% in the 1990s. Cutting rates increased by 2 percentage points in the EU/EFTA subregion from the 1990s to 2001, and fell by the same amount, 2 percentage points, in North America, down to 71% in 2001.

Environmental concerns about source of roundwood supply have expressed themselves in demands for forest certification. The area of certified forests in the UNECE region grew rapidly in 2001. Approximately 90% of the world's 124 million hectares of certified forests are in the UNECE region. In Europe the certified forestland area accounts for about 35% of total. Finland is the only country where all forests are certified. In Canada the certification rate is 7% and in the United States 18% (see chapter 11 for more coverage of certification). National forests in the United States continue to reduce harvests, in part due to environmental concerns. The removals from privately-owned and industrial forestlands have increased in partial compensation.

GRAPH 6.2.1

Softwood sawlog prices in Germany, 1998-2002



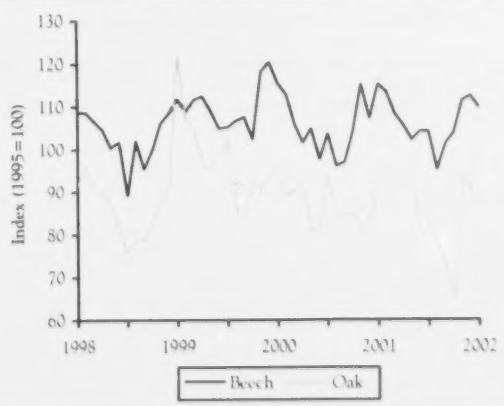
Source: Statistisches Bundesamt Preise, 2002.

Lower primary-processed product demand in 2001 reduced roundwood demand. Coupled with the storm-derived oversupply, prices for roundwood weakened in Europe in 2000 and 2001(graph 6.2.1 and 6.2.2). Weaker prices led forest owners and managers to delay harvests, resulting in a supply shortage in the second half of 2001 in the EU/EFTA subregion, part of which was relieved by increasing imports from outside the region, i.e. from the CIS and "Other Europe" and another part which came from the windstorm felled stocks. The European Softwood Conference, meeting in Berlin in October 2001, noted the supply shortages and called for increased availability. Prices appear to be rising in early 2002 and may have recovered to pre-storm levels in some countries. Due to the highly uncertain global economic situation, few signs of the firming demand of forest products have been seen in the first half of 2002.

In early 2002, there are possibilities of firmer wood raw material prices as some primary processed products' prices bottomed out, and moved up. For example, slight price increases for some sawnwood assortments have occurred in western Europe (EUWID, June 2002) (chapters 7 and 8), raising the possibility of a continued upturn in European sawlog prices (graph 6.2.3). Softwood pulp prices have been rising since April 2002 according to PIX indexes[1] (www.foex.fi) which is not yet reflected in the pulpwood prices available at the time of analysis (graphs 6.2.4 and 6.2.5) (chapter 10).

GRAPH 6.2.2

Hardwood sawlog prices in Germany, 1998-2002



Source: Statistisches Bundesamt Preise, 2002.

[1] The PIX indexes are benchmark price indexes for various qualities of pulp and paper.

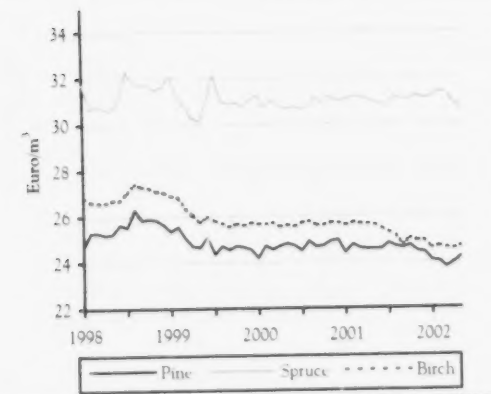
GRAPH 6.2.3

Finnish sawlog prices, 1996-2002

Note: Prices are for sawlogs at the roadside.
Source: Finnish Forest Research Institute, 2002.

GRAPH 6.2.4

Pulpwood prices in Finland, 1998-2002



Note: Prices are for roadside pulpwood.
Source: Finnish Forest Research Institute, 2002.

With continued expansion of recycled fibre use and reductions in European woodpulp production in 2001, reported pulpwood prices also showed weakness. In Finland for example, where nearly 80% of timber is harvested from privately-owned forests and most timber is reportedly traded on the stump (International Woodfiber Report), pulpwood stumpage prices receded in 2001. According to data from the Finnish Forest Research Institute, pulpwood stumpage prices for pine and birch receded by about 9% from January to December 2001 and then levelled out in the first half of 2002, while prices for spruce pulpwood fell by only 4% and then recovered in the first half of 2002. It can be noted that the recent downturn in the pulp and paper sector had much more modest pulpwood price impacts in Finland than in the south eastern United States, where pine pulpwood stumpage prices have fallen by about 50% since 1998.

The downturn in United States paper and paperboard production since 1999, combined with the rising tide of product imports since 1996, and increased use of recycled fibre have all contributed to declining United States woodpulp production (off by 11% in 2001 relative to the historical peak in 1995) and also a significant drop in pulpwood demand and prices, particularly stumpage prices. In the south eastern United States, average stumpage prices paid for southern pine pulpwood in the first quarter of 2002 were roughly 50% lower than the peak price levels of 1997 to 1998, erasing virtually all of the price gains of the 1990s and taking real prices for pine pulpwood in the region back to historically low levels of the late 1980s (*Timber Mart-South*). Likewise pulpwood chip prices in the western United States reportedly dropped in real terms to levels last experienced in the 1960s (*International Woodfiber Report*).

North America sawnwood prices have risen from the end of 2001 and may rise further due to the new 27.2% duties in 2002 for Canadian sawn softwood imported by the United States (*Wood Markets Monthly*, May 2002) (chapter 7). This could lead to increases in roundwood prices in North America. Sawn hardwood demand was down in 2001, which was reflected in hardwood sawlog prices (graph 6.2.6) (chapter 8). However, if the expected pick up in the United States and global economy in the end of this year comes true, an increase in product demand increases demand for roundwood and European harvests. However, the uncertainty in the economic development is still marked especially in the United States and firmer growth is forecasted not earlier than in 2003 (chapter 2).

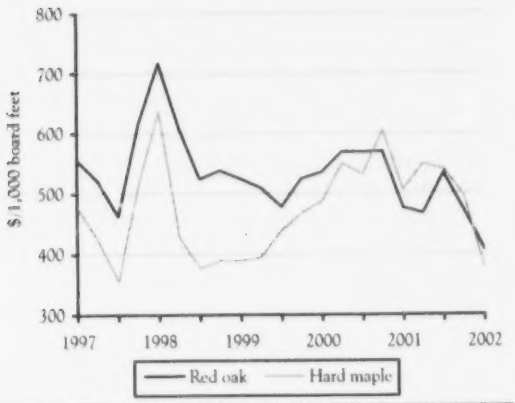
GRAPH 6.2.5

Pulpwood prices in Germany, 1995-2002

Source: Statistisches Bundesamt Preise, 2002.

GRAPH 6.2.6

United States hardwood log prices, 1997-2002

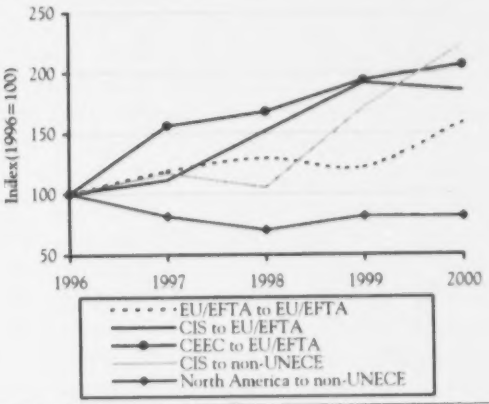


Note: Northern red oak & hard maple from northwest Pennsylvania. Average prices paid FOB mill, grade High F1+ logs.

Source: Pennsylvania State University, School of Forest Resources, 2002.

GRAPH 6.2.7

Major industrial roundwood trade flows in the UNECE region, 1996-2000



Source: UN COMPTRADE/EFI, 2002.

6.2.2 *Roundwood trade*

The majority of the region's roundwood production is used domestically, with the exception of CIS countries, where up to one quarter of the harvest is exported. Striving to obtain value-added through domestic processing restricts trade of sawlogs and veneer logs. However lower-valued pulpwood is transported great distances. Nevertheless, for the EU/EFTA, Other Europe and CIS subregions, trade was active in 2000 and 2001. As the most current direction of trade statistics are for 2000, the effects of the windstorm volumes are apparent (graph 6.2.7). EU/EFTA intra-regional trade advanced strongly as Denmark, France, Germany and Switzerland exported their oversupply as quickly as possible to preclude insect and fungi degradation and storage costs.

It is interesting to compare the trade flow table presented last year in this chapter to this year's update (table 6.2.3). The table's percentages are per cent of global trade. The 4-year moving average conceals short-term developments, such as the exceptional 1999 storm-induced trade. However when increases do occur, they must be considerable to show percentage gains on a global basis. This is the case with exports of industrial roundwood from "Other Europe" to EU/EFTA, which rose from 8.5% in the 1996-1999 period to 12% in the 1997-2000 period. Due mainly to the storms of 1999, and combined with strong demand in 2000, EU/EFTA trade accelerated by 30% between the 1996-1999 and 1997-2000 periods. EU/EFTA exported much more of its roundwood offshore too, and as a result, EU/EFTA's percent of world trade rocketed from 10.1% to 17.6%. during the 1997-2000 period.

As a result of the storm-felled timber in the EU/EFTA region, imports from the CIS and Other Europe declined in 2000. The CIS to EU/EFTA trade flow decreased by 6.6% between 1999-2000. It appears that they have re-established at former levels in 2001. One of the strongest trade channels, which nearly doubled from 1998 to 2000, has been from the CIS countries, especially Russia, to Asian countries, predominantly China and Japan. Trade journal reports in mid 2002 confirmed Russia was gaining greater market share in these two countries.

The region as a whole is a net exporter of roundwood, with a positive 13.9 million m^3 in 2001. Roundwood imports for the UNECE were 79.1 million m^3 in 2001 and the main import sources were CIS and "Other Europe" subregion (trade includes intra-regional trade), and also "Other developed" countries. The main flows from outside the UNECE region are tropical logs to France, Italy, Portugal and Spain and softwood and eucalyptus logs from Southern hemisphere countries like Brazil and Chile (see chapter 5) to the Nordic countries and Spain. The region exports outside to Asia, especially from Russia and Canada and to China, especially from France and Germany. About 19% of world roundwood trade is from the UNECE region to southeast Asian countries (of which some percentage returns to the region as semi- or fully-manufactured products (chapters 12 and 13).

Net exports of the UNECE region ballooned in 2001, by 77% in volume, mainly due to increased exports by 20.5% by Russia. France, Germany, Switzerland and Denmark all registered decreases in roundwood exports, from 9.9% for France, to 42.2% for Denmark. Roundwood imports as well as exports in the UNECE region as a whole has significantly increased between 1998 and 2001, whereas since 1998 the net exports of the UNECE region have roughly doubled.

The drop in value of exports in 2001 was even greater, decreasing by 23.4% in the EU/EFTA subregion, by 9.2% in Other Europe and by 11.2% in North America (table 6.2.5). Before 2001 the EU/EFTA exports had been increasing with strong intra-regional trade, plus some smaller amounts outside the region, for example beech logs to China. Only the Russian Federation has seen high growth rates throughout the last 5 years, including in 2001, when exports increased by 26.5% in value.

Another important flow of industrial roundwood was the 15.3% of global trade from EU/EFTA countries to EU/EFTA countries (intra-regional trade). The main industrial roundwood flows were from Sweden to Norway and from Germany to Austria. Both exporters reduced their exports in 2001. Germany's exports below those of 1998 before the storms and the fall was mainly due to the lower exports of softwood roundwood to Austria (EUWID, May 2002). The EU/EFTA subregion receives 46% of global imports, mainly from CIS, "Other Europe", "non-UNECE" and as intra-trade from the EU/EFTA countries. Now that most of the storm-generated roundwood has been absorbed, greater imports from the CIS and Other Europe would be consistent with current trends.

The most important flows of roundwood trade inside the UNECE region were the exports from the CIS, mainly from Russia, to the EU/EFTA subregion corresponding to 12.6% of global trade. The exports were mainly going to Finland and Sweden. In 2001 Russian exports to Finland went up 20% , while exports to Sweden fall about 30% (EUWID, June, 2002).

Significant exports of roundwood continue going from "Other Europe" to the EU/EFTA subregion, corresponding to 12% of global industrial roundwood trade. Exports of wood raw materials can be a precursor to sector development as necessary funds become available to develop further the manufacturing capabilities with the country. The export flow from "Other Europe" was dominated by exports from the Czech Republic to Austria and from Estonia and Latvia to Sweden. Roundwood exports from Estonia and Latvia decreased in 2001, which was largely due to the significant fall of softwood roundwood exports to Sweden (EUWID, April 2002).

Also of note were the exports from the CIS (11.5%) and from North America (7.5%) to the "non-UNECE" subregion i.e. countries outside the UNECE region. The recipients of this roundwood trade were principally Japan, receiving the largest share, and China. In 2001 Japanese imports of logs dropped more than 2 million m^3 (to 13.9 million) from 2000 figures, mainly at the expense of US exports (*Wood Markets Monthly*, May 2002). Japan increased imports of storm-felled roundwood from western Europe from 2000 to 2001. Japan's increased imports of European roundwood could be short lived as they are undergoing a structural change from raw material imports, such as logs, and importing more primary-processed products due to the high cost of domestic labour. Even though the quantities are small, for example, France increased its supplies tenfold and Germany maintained the extraordinary high 2000 levels (EUWID June 2002). Around 7.6% of North American "exports" stayed in the same subregion, as intra-trade between Canada and the United States nearly doubled from 1996 to 2000 and now dominates Canadian imports.

TABLE 6.2.3

Major industrial roundwood trade flows in UNECE region 1997-2000

(% of global trade)

To:		From: EU/EFTA DEU	FRA	CHE	Total	Other Europe EST	LVA	CZE	HUN	SVK	Total	CIS RUS	Total	North America USA	CAN	Total	Non-UNECE NZL	MYS	GAB	PNG	CHL	Total	Grand total
EU/EFTA	Finland	0.1			0.1	0.8	0.2				1.0	8.8	8.9										10.1
	Sweden	0.6			1.7	1.8	2.9				5.2	2.5	2.5										9.3
	Austria	1.6		0.5	2.1			1.7	0.5	0.7	3.3	0.1	0.3										5.8
	Italy	0.6	1.0	0.9	3.4				0.3		0.9			0.5		0.5						0.4	5.2
	Germany		0.5	0.1	1.5	0.1		0.5			0.7	0.4	0.4	0.4		0.5						0.2	3.3
	Spain		0.7		1.4									0.1		0.1					0.1	0.8	2.4
	Norway	0.1			0.8	0.5					0.5	0.6	0.6								0.1	0.4	2.4
	France	0.1		0.2	0.6									0.1		0.1			0.5			1.1	1.8
	Portugal		0.2		0.6									0.1		0.1			0.1			1.0	1.8
	Total	4.0	3.6	1.6	15.3	3.3	3.1	2.2	0.9	0.8	12.0	12.6	13.0	1.4	0.2	1.6			0.8		0.3	4.2	46.1
Other Europe	Turkey										0.1	0.6	0.8						0.1			0.2	1.2
	Total	0.6			0.7			0.1	0.2	0.2	1.2	1.4	2.2						0.1			0.3	4.4
CIS	Russian Federation										0.2		0.2										0.4
	Total										0.2	0.2	0.5										0.7
North America	Canada													5.6		5.6							5.6
	USA														2.0	2.0						0.1	2.2
	Total													5.6	2.0	7.6						0.1	7.8
Non-UNECE	Japan				0.1							6.6	6.6	4.7	1.1	5.8	1.9	2.0	0.1	0.8	0.2	5.9	18.4
	China	0.2	0.1		0.4							3.6	3.6	0.1		0.1	0.2	0.9	0.8	0.2		3.4	7.5
	Republic of Korea											1.2	1.2	0.6		0.6	3.1	0.3		0.3	0.5	4.8	6.7
	India																0.3	0.7				1.6	1.6
	Taiwan P.o.C				0.1									0.2		0.2	0.1	0.9				1.1	1.3
	Hong Kong	0.1	0.1		0.3									0.1	0.1	0.1		0.4	0.1			0.8	1.3
	Total	0.4	0.4		1.4						0.1	11.4	11.5	6.1	1.3	7.5	5.9	5.5	1.1	1.6	0.8	20.5	41.0
Grand total		5.0	3.9	1.6	17.6	3.3	3.2	2.3	1.1	1.0	13.5	25.6	27.1	13.2	3.5	16.7	6.0	5.6	2.0	1.6	1.2	25.1	100.0

Note: AUT = Austria, BEL = Belgium, BRA = Brazil, CAN = Canada, CHE = Switzerland, CHL = Chile, CHN = China, CZE = Czech Republic, DEU = Germany, ESP = Spain, EST = Estonia, FIN = Finland, FRA = France, GAB = Gabon, GBR = United Kingdom, HRV = Croatia, HUN = Hungary, IDN = Indonesia, ITA = Italia, JAP = Japan, KOR = Republic of South Korea, LVA = Latvia, MAL = Malaysia, MEX = Mexico, MYS = Malaysia, NLD = Netherlands, NOR = Norway, NZL = New Zealand, PNG = Papua New Guinea, POL = Poland, P.o.C = Province of China, PRT = Portugal, RUS = Russian Federation, SVK = Slovakia, SWE = Sweden, THA = Thailand, USA = United States, ZAF = South Africa.

Source: UN COMTRADE/EFI. 2002.

TABLE 6.2.4

Roundwood export and import volumes in the UNECE region, 1997-2001

(1,000 m³)

	1997	1998	1999	2000	2001	Change 2000 to 2001 Volume	Change 2000 to 2001 %
EXPORTS							
EU/EFTA	14 301	16 062	16 812	23 157	19 929	-3 229	-13.9
of which:							
France	2 655	3 258	3 442	5 859	5 278	-581	-9.9
Germany	4 063	4 902	4 598	5 604	4 301	-1 303	-23.3
Switzerland	1 160	1 021	1 239	3 754	3 149	-605	-16.1
Sweden	1 404	1 455	1 335	1 462	1 339	-123	-8.4
Other Europe	12 941	15 292	16 001	17 160	17 088	-72	-0.4
of which:							
Latvia	3 139	4 251	3 751	4 353	4 095	-258	-5.9
Estonia	3 041	3 875	4 016	4 432	3 683	-749	-16.9
Czech Republic	2 827	2 661	2 798	2 030	2 485	455	22.4
Slovakia	1 081	735	1 232	1 612	2 428	816	50.6
CIS	19 950	22 343	29 968	34 400	41 103	6 703	19.5
of which:							
Russian Federation	18 753	20 947	28 280	32 049	38 610	6 561	20.5
Belarus	711	881	834	945	1 088	143	15.1
Ukraine	479	508	844	844	844	0	0.0
North America	11 897	14 407	14 022	15 000	14 798	-202	-1.3
Canada	901	2 067	2 248	3 048	3 386	338	11.1
United States	10 996	12 339	11 775	11 952	11 412	-540	-4.5
IMPORTS							
EU/EFTA	40 253	49 036	52 476	61 749	59 216	-2 532	-4.1
of which:							
Finland	6 775	9 347	10 301	10 005	11 993	1 988	19.9
Sweden	7 745	9 301	10 428	11 898	9 659	-2 239	-18.8
Austria	5 433	5 237	7 093	8 464	7 812	-652	-7.7
Spain	2 137	4 150	3 243	7 532	7 532	0	0.0
Other Europe	3 546	4 194	4 933	5 556	5 073	-483	-8.7
of which:							
Czech Republic	505	784	817	954	976	22	2.3
Turkey	1 049	1 346	1 430	1 883	937	-946	-50.2
Poland	288	372	591	732	882	150	20.5
Estonia	110	298	380	346	583	236	68.2
CIS	526	483	396	800	479	-321	-40.1
of which:							
Russian Federation	335	228	153	527	206	-321	-60.9
Belarus	0	60	150	105	106	1	0.8
Kazakhstan	0	0	0	76	76	0	0.0
North America	7 563	8 044	7 685	13 578	14 296	718	5.3
Canada	6 753	7 012	6 201	6 540	6 990	450	6.9
United States	810	1 032	1 484	7 038	7 306	268	3.8

Source: UNECE/FAO TIMBER database, 2002.

TABLE 6.2.5

Roundwood export and import values in the UNECE region, 1997-2001

($1,000)

	1997	1998	1999	2000	2001	Change 2000 to 2001 Value	%
EXPORTS							
EU/EFTA	628 753	1 193 020	1 205 879	1 431 612	1 096 578	-335 034	-23.4
of which:							
Germany	155 634	312 532	255 897	405 879	310 098	-95 781	-23.6
France	37 448	303 685	294 760	399 802	278 061	-121 741	-30.5
Switzerland	64 601	64 677	98 369	161 732	130 037	-31 695	-19.6
Austria	61 075	70 649	88 795	69 047	76 657	7 611	11.0
Other Europe	380 220	719 004	769 831	719 741	653 542	-66 199	-9.2
of which:							
Croatia	335	111 611	114 552	114 552	114 552	0	0.0
Estonia	53 190	152 448	146 451	135 955	109 482	-26 473	-19.5
Latvia	84 500	133 874	110 181	120 973	106 663	-14 310	-11.8
Czech Republic	145 465	135 718	148 717	93 917	101 223	7 306	7.8
CIS	989 982	987 987	1 342 122	1 480 652	1 841 050	360 398	24.3
of which:							
Russian Federation	978 597	959 897	1 220 077	1 356 630	1 716 608	359 978	26.5
North America	1 718 702	1 517 372	1 608 399	1 762 185	1 564 079	-198 106	-11.2
Canada	97 454	170 959	253 318	313 202	302 395	-10 807	-3.5
United States	1 621 248	1 346 413	1 355 081	1 448 983	1 261 684	-187 299	-12.9
IMPORTS							
EU/EFTA	2 953 960	3 425 678	3 488 988	3 363 808	3 014 225	-349 583	-10.4
of which:							
Italy	507 070	507 070	531 247	518 271	453 471	-64 800	-12.5
Finland	292 506	400 292	393 431	352 760	415 674	62 914	17.8
Austria	350 670	344 200	469 601	435 989	386 226	-49 763	-11.4
Sweden	360 803	436 516	476 480	484 202	365 725	-118 477	-24.5
Other Europe	257 219	340 549	300 040	328 351	277 035	-51 316	-15.6
of which:							
Turkey	87 140	134 400	104 153	128 616	67 306	-61 310	-47.7
Poland	16 200	21 100	31 300	36 300	40 700	4 400	12.1
Czech Republic	7 512	35 991	36 073	40 805	34 232	-6 574	-16.1
Croatia	52 401	43 198	31 807	31 807	31 807	0	0.0
CIS	13 802	15 855	14 614	25 223	16 007	-9 216	-36.5
of which:							
Ukraine	4 870	5 068	4 885	4 885	4 885	0	0.0
Russian Federation	7 178	5 857	5 020	13 330	4 555	-8 775	-65.8
Belarus	0	3 175	4 554	4 141	3 770	-371	-9.0
North America	407 934	474 808	514 867	606 444	585 054	-21 389	-3.5
Canada	337 973	363 291	362 196	383 831	386 127	2 297	0.6
United States	69 961	111 517	152 671	222 613	198 927	-23 686	-10.6

Source: UNECE/FAO TIMBER database, 2002.

TABLE 6.2.6

Roundwood apparent consumption in the UNECE region, 1998-2001

(1,000 m^3)

	1998	1999	2000	2001	Change 2000 to 2001 Volume	%
EU/EFTA	299 915	310 763	343 605	312 627	-30 978	-9.0
of which:						
Austria	18 467	20 125	20 781	20 189	-592	-2.8
Denmark	2 074	2 023	3 040	2 501	-539	-17.7
Finland	62 290	63 170	63 733	63 799	66	0.1
France	34 265	41 742	42 012	35 522	-6 490	-15.4
Germany	36 454	35 792	51 702	36 646	-15 056	-29.1
Italy	14 990	16 443	15 600	13 145	-2 455	-15.7
Sweden	68 446	67 793	75 256	73 240	-2 016	-2.7
Switzerland	3 558	3 874	5 788	2 096	-3 692	-63.8
Other Europe	98 360	108 041	114 260	113 037	-1 223	-1.1
of which:						
Czech Republic	12 114	12 222	13 365	12 865	-500	-3.7
Latvia	5 860	10 402	10 087	10 155	68	0.7
Lithuania	4 176	4 062	4 358	4 472	114	2.6
Poland	23 116	24 468	26 410	25 840	-570	-2.2
Romania	11 490	12 102	12 634	12 337	-297	-2.3
Turkey	18 921	19 040	18 666	17 091	-1 575	-8.4
Russian Federation	74 281	115 473	126 578	123 896	-2 682	-2.1
North America	664 647	684 469	676 823	657 284	-19 539	-2.9
Canada	181 939	197 119	181 563	180 297	-1 266	-0.7
United States	482 709	487 350	495 260	476 987	-18 273	-3.7

Source: UNECE/FAO TIMBER database, 2002.

6.2.3 *Apparent consumption of roundwood*

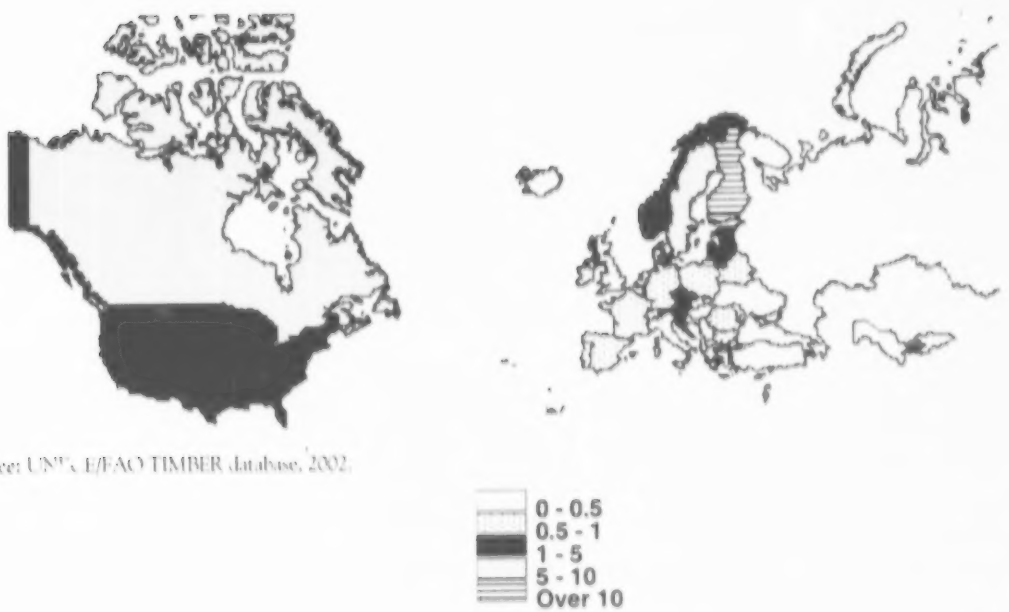
Apparent consumption of roundwood in the UNECE region had been growing from 1998 to 2000 due to increasing trade and production of forest products, however in 2001 consumption fell by 4.3%, to a level of 1.2 billion m^3 (table 6.2.6 and graph 6.2.8). In 2001 consumption went down in all the subregions of the UNECE. One general reason for this has been the economic recession that weakened the demand for forest products in 2001. In the EU/EFTA subregion the decrease in consumption was much larger than in the other areas, by 9%. This was related to the effects of the 1999 storms, that felled large volumes in France, Germany and Switzerland, and smaller, though still significant volumes in other western European countries. After an 11% rise in 2000 the consumption of the EU/EFTA subregion fell back, but not to the level that prevailed before the 1999 storms. The countries primarily affected by the storms showed considerably divergent changes in apparent consumption in 2001: France down by 15.4%, Germany down by 29% and Switzerland down by 63.8%. In 2000 the huge volumes of roundwood, arising from the storm damages led to a more effective use of sawmilling capacities, leading in some cases to stocking of roundwood and sawnwood at mills. While not validated by the statistics, there are indications that some countries, for example Austria, may have added sawmilling capacity in 2000 and 2001 to process the storm-produced timber. Now that stocks of roundwood from the storms in western Europe have been exhausted, those mills may turn eastward for their roundwood. EU/EFTA area consumes about 25% of all roundwood consumed in the UNECE region.

In the UNECE region, roundwood apparent consumption per capita is highest in Finland and Sweden. For these two exporting countries, "consumption" is actually processing and exporting as primary-processed and secondary-processed products.

FIGURE 6.2.1

Apparent consumption of roundwood in the UNECE region, 2001

(m³/capita)



Source: UNECE/FAO TIMBER database, 2002.

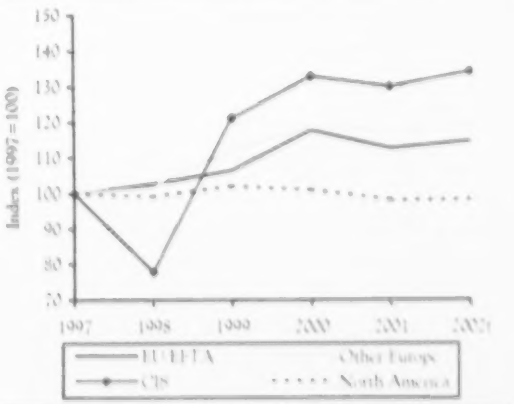
This is related to the tradition of using wood in construction and also to the efforts that have been made to develop the wood processing industry, that have an important role in Finnish national economy (figure 6.2.1). Considering the subregions, North America at 2.1 m^3, has the highest consumption per capita, of which 5.8 m^3 in Canada and 1.7 m^3 in the United States (annex table 1). For the EU/EFTA subregion, roundwood consumption per capita amounts to 0.8 m^3, followed by "Other Europe" with 0.6 m^3 and the CIS with 0.5 m^3 per capita.

6.2.4 *Wood residues, chips and particles trade*

The UNECE region is a net exporter of wood residues, chips and particles (table 6.2.7). However, the volume of net exports dropped significantly, by 34%, between 1997 and 2001. This was, largely due to the significant drop, by 38%, in the exports from the United States. Contrary to the total UNECE, EU/EFTA subregion is a net importer of wood residues, chips and particles. In 2001 the quantity of EU/EFTA imports rose to 14.6 million m^3 (12.8%), while exports fell. Overall net exports of the whole region fell by 55% to their lowest level in the last 5 years. Along with falling export volumes, the value of the trade of wood residues, chips and particles fell (table 6.2.8).

GRAPH 6.2.8

Consumption of roundwood in the UNECE region, 1997-2002



Note: f = The Timber Committee's forecast trend for 2001 to 2002, made at the October 2001 session, was applied to the 2001 figure.

Source: UNECE/FAO TIMBER database, 2002.

TABLE 6.2.7

Wood residues, chips and particles, export and import volumes in the UNECE region, 1997-2001

(1,000 m³)

	1997	1998	1999	2000	2001	Change 2000 to 2001 Volume	Change 2000 to 2001 %
EXPORTS							
EU/EFTA	7 429	12 251	8 364	9 761	9 459	-302	-3.1
of which:							
Germany	3 522	7 677	3 653	4 505	3 976	-529	-11.7
France	1 156	1 318	1 568	1 810	1 586	-224	-12.4
Austria	557	699	842	961	1 195	234	24.3
Belgium	...	...	698	691	665	-25	-3.7
Switzerland	226	301	176	424	485	61	14.4
Other Europe	1 824	2 091	2 486	2 555	3 385	830	32.5
of which:							
Latvia	235	334	514	733	1 123	390	53.2
Estonia	747	1 070	1 158	796	1 045	249	31.3
Czech Republic	479	339	497	662	670	8	1.2
Slovakia	185	181	151	143	270	127	88.8
CIS	701	529	600	651	651	0	0.0
of which:							
Russian Federation	701	529	600	600	600	0	0.0
North America	8 002	7 590	7 941	7 019	5 696	-1 324	-18.9
Canada	1 707	1 498	1 575	1 735	1 789	53	3.1
United States	6 294	6 092	6 366	5 284	3 907	-1 377	-26.1
IMPORTS							
EU/EFTA	10 950	12 724	12 002	12 933	14 588	1 655	12.8
of which:							
Italy	1 499	1 703	1 759	2 082	2 125	43	2.1
Sweden	921	939	994	1 319	1 692	373	28.3
Belgium	...	...	1 489	1 377	1 554	177	12.8
Finland	943	1 079	1 118	1 230	1 546	316	25.7
Other Europe	707	219	333	361	416	55	15.2
of which:							
Slovenia	69	84	119	154	154	0	-0.1
Czech Republic	54	65	73	95	84	-11	-11.6
Slovakia	4	10	45	35	74	39	111.4
Hungary	450	34	49	46	46	0	0.0
CIS	3	3	5	6	6	0	1.9
North America	3 075	2 827	2 044	2 367	2 237	-130	-5.5
Canada	1 611	1 816	1 112	2 009	1 998	-11	-0.6
United States	1 464	1 011	932	358	239	-119	-33.2

Source: UNECE/FAO TIMBER database, 2002.

TABLE 6.2.8

Wood residues, chips and particles, export and import values in the UNECE region, 1997-2001

($1,000)

	1997	1998	1999	2000	2001	Change 2000 to 2001 Value	%
EXPORTS							
EU/EFTA	215 922	231 166	217 336	233 402	215 505	-17 897	-7.7
of which:							
Germany	63 181	63 707	53 002	81 832	63 824	-18 008	-22.0
France	38 043	42 445	47 199	45 297	37 955	-7 341	-16.2
Austria	29 045	19 239	23 322	23 329	24 245	916	3.9
Belgium	...	...	25 451	21 387	23 569	2 182	10.2
Switzerland	7 543	15 942	7 614	6 347	5 784	-563	-8.9
Other Europe	32 724	41 817	81 721	56 978	74 046	17 068	30.0
of which:							
Estonia	10 548	17 762	50 639	20 281	25 374	5 093	25.1
Latvia	3 917	6 891	9 610	15 444	23 607	8 164	52.9
Czech Republic	11 739	7 285	9 257	8 083	8 203	120	1.5
Poland	3 400	4 000	5 400	4 900	6 100	1 200	24.5
CIS	17 293	16 481	18 615	20 292	20 305	13	0.1
of which:							
Russian Federation	17 278	16 475	18 600	18 600	18 600	0	0.0
North America	635 014	585 606	565 283	539 305	442 387	-96 918	-18.0
Canada	117 155	93 836	99 709	120 962	136 996	16 034	13.3
United States	517 859	491 770	465 574	418 343	305 391	-112 952	-27.0
IMPORTS							
EU/EFTA	326 967	340 204	378 128	335 608	349 469	13 862	4.1
of which:							
Sweden	41 298	44 166	71 787	64 625	66 502	1 877	2.9
Finland	24 768	28 177	31 675	33 009	43 083	10 074	30.5
Italy	32 604	32 600	37 241	37 080	35 621	-1 459	-3.9
Belgium	...	...	40 404	30 747	29 781	-966	-3.1
Other Europe	22 100	23 105	9 492	8 406	7 634	-772	-9.2
of which:							
Slovenia	1 908	2 816	3 563	3 347	3 111	-236	-7.1
Czech Republic	655	1 364	1 215	1 373	894	-479	-34.9
Slovakia	257	520	1 257	1 000	615	-384	-38.5
Hungary	834	448	658	593	593	0	0.0
CIS	275	238	277	19	22	3	15.0
North America	132 026	136 687	129 127	154 483	154 514	31	0.0
Canada	49 195	64 335	64 743	79 292	69 819	-9 473	-11.9
United States	82 831	72 352	64 384	75 191	84 695	9 504	12.6

Source: UNECE/FAO TIMBER database, 2002.

TABLE 6.3.1

December 1999 windthrow versus 1998 annual removals in Europe

(Million m^3)

	Windthrow volumes 1999	Annual removals 1998	% of annual removals
France	139.6	42.9	325.4
Switzerland	12.1	4.2	288.1
Denmark	3.5	2.2	159.1
Germany	30.0	39.0	76.9
Sweden	5.0	58.1	8.6
Poland	2.0	23.3	8.6
Austria	0.4	14.0	2.9
Lithuania	0.4	4.9	8.2
Total	193.0	188.6	102.3

Sources: National reports and UNECE/FAO TIMBER database, 2001.

6.3 EU/EFTA subregional developments

6.3.1 *Industrial wood in the rough developments*

During 2001 the balance of the European roundwood markets has improved as the majority of roundwood volumes from the three storms in December 1999 has been bought to market[4]. The total amount of windthrow was nearly 200 million m^3 (table 6.3.1). For France, Switzerland, Denmark and Germany, the most affected countries, the volume of windthrow was nearly 100 million m^3 more than the average annual harvest. Although the main part of this volume has already bought to markets, some small roundwood volumes still remained stocked in the forests at the beginning of 2002. For example, in Germany there is still an excess supply of large dimension logs in the beginning of 2002. Either because of high harvesting and transportation costs, or unacceptable wood quality, or for ecological reasons considerable volumes were not removed from forests for use as roundwood or chips. A further 1 to 2 million m^3 of logs have not yet come to market because of beetle (Ips typographus) infestation (TTJ, 2002).

In EU/EFTA countries the annual average increase of fellings has been 1.8 million m^3 from 1997 to 2001. During 2000 and again in 2001 the European roundwood markets could be characterized by oversupply situation caused mainly by the storms in December 1999. A sharp rise of 11% in roundwood production after the storms occurred in 2000. In 2001 the countries affected by the storm damages reduced roundwood production and the total fellings returned towards the level before storms. The weakening demand for forest products and falling prices also worsened the imbalance in the European roundwood markets in 2001. In Finland, this situation led to nearly 4% fall in roundwood production and Sweden did not significantly increase fellings.

Due to the oversupply situation, the European annual export and import unit prices of roundwood have decreased clearly in 2000 and 2001 (table 6.3.2). However, during 2001 the market balance started gradually to improve due to decreased fellings. For example in Germany, softwood and hardwood log prices started to firm in the end of 2001 as shown in the price graphs earlier. In the first half of 2002 some signs of firming demand and price development in products markets indicate also a further improvement in roundwood market balance. However, the balance will significantly improve only if the demand of forest products picks up in the second half of 2002.

The EU/EFTA subregion is a net importer and also the largest importer of roundwood. The quantity of imports as well as net imports have grown about 50% from 1997 to 2000. In 2001 the area suffered from oversupply situation and imports fell by 4%. Finland was the only country in the area that significantly increased, by 20%, its imports in 2001. The EU/EFTA subregion receives about one third of its industrial roundwood imports from countries within the subregion and exports nearly 90% to the countries of the same subregion (intra-trade).

TABLE 6.3.2

Roundwood unit prices for exports and imports in the UNECE region, 1997-2001

($/m^3$)

	1997	1998	1999	2000	2001
EXPORTS					
EU/EFTA	44	74	72	62	55
Other Europe	29	47	48	42	38
CIS	50	44	45	43	45
North America	144	105	115	117	106
TOTAL	63	65	64	60	55
IMPORTS					
EU/EFTA	73	70	66	54	51
Other Europe	73	81	61	59	55
CIS	26	33	37	32	33
North America	54	59	67	45	41
TOTAL	70	69	66	53	49

Source: UNECE/FAO TIMBER database, 2002.

[4]For detailed information: "Effects of the December 1999 Storms on European Timber Markets", a special chapter in the *Forest Products Annual Market Review, 1999-2000*, 15 pages.

In the EU/EFTA the imports of the whole product group of wood residues, chips and particles consisted of 57% wood residues and the rest were chips and particles in 2001. From 1997 to 2001 the growth of imports of wood chips and particles has grown faster, by 53%, than wood residues which increased 22%.

Considering exports from EU/EFTA, the share of wood residues was slightly larger than the share of wood chips and particles in 2001. The biggest exporter, Germany, exports mainly wood residues. The storm effects increased also the exports of wood residues from Germany by 50% in 2000.

6.3.2 *Wood fuel trade in EU/EFTA*

6.3.2.1 *Wood energy and other biomass resources*

In the UNECE region the share of wood fuel in total wood raw material production is 13%. Production of other wood raw materials (i.e. chips and particles, wood residues and charcoal) hold a minor share of the market. Biomass includes various items, such as forest residues (wood chips), industrial by-products (sawdust, bark, wood chips) industrial black liquors (liquid by-products from pulp industry, to be used in mills' energy production), firewood (residential), wood wastes (different wood residue fractions, e.g., from construction), refined wood fuels (e.g., pellets, briquettes) and other biomass resources (e.g. straw, short rotation coppice, energy grasses and peat)[5]. The importance of these items in the consumption of biomass energy differs much between different countries. In developing countries firewood is the most important and it also dominates the total energy consumption, while in developed countries firewood in the total energy has a minor role.

Today only 6% of the European Union's energy consumption comes from renewable energy sources. The target stated in the European Commission White Paper on biomass energy is to double its proportion by 2010.

Biomass is a sector of the renewable energy that is projected to grow fastest in Europe. From all European energy consumption, biomass accounts for about 3 to 4%. (*Energy Statistics* 2000, 2001). For comparison, in the United States, which uses about a quarter of the global primary energy, biomass accounts for about 3%, however the share is expected to show significant growth.

6.3.2.2 *Wood energy consumption in Europe*

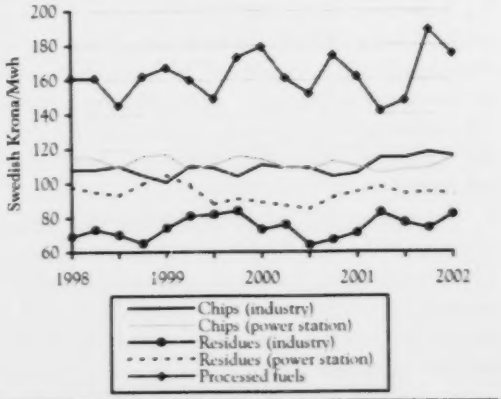
The statistics and standards of wood energy use are still being developed in Europe and unfortunately accurate and complete figures on wood energy markets are not available. In 2000, the Finnish Forest Research Institute started to collect statistics on the quantity and prices of solid wood fuel (forest residues, industrial by products, wood waste, pellets and briquettes) used for heat and power plants in energy production, but excluding residential firewood. Sweden has reported wood energy prices in the Review previously. For most qualities there has been little significant change over time, however the price of processed fuels, e.g., pellets, is rising (graph 6.3.1).

The consumption of wood based energy and also the importance of different biomass types, vary considerably depending on the country (table 6.3.3).

Responses from 20 European countries in 1999 to questionnaires from a study by the European Agriculture and Forestry Biomass Network showed wood accounts for the majority of the biomass energy consumption (Vesterinen and Alakangas 2001). However, the data were not directly obtained for some countries, which necessitated estimates and decreased reliability of the results. In most countries, especially Finland and Sweden, the most important renewable resource is wood. Black liquors from paper industry are usually used for the industry's own energy production. The survey showed that in Germany and Poland other resources than wood, mostly straw, are dominating biomass energy sources. The main reason for these differences in energy consumption can be found in land use. In the European total, domestic firewood

GRAPH 6.3.1

Swedish wood energy prices, 1998-2002



Source: *Prisblad för biobränslen, torv*. Eenergimyndigheten, (Official biomass energy prices), 2002.

[5] FAO's Unified Wood Energy Terminology (UWET) further defines terminology for woodfuels and other biofuels.

TABLE 6.3.3

European wood and other biomass energy, 1999

(peta joules per year, PJ/a)

	Forest residues	*Solid. industrial by products*	*Black liquors*	*Domestic firewood*	*Wood waste*	*Solid wood fuels*	*Total wood based*	*Other biomass & peat*	**Total**
Austria	23.8	51.6	18.6	27.9	0.7	3	125.6	0.2	**125.8**
Belgium	0	5.7	7.6	0.3	0	0	13.6	0	**13.6**
Denmark	8.5	5.9	0	3.8	0.2	3.9	22.3	15	**37.3**
Finland	5	46.4	134.8	36	6.8	0.1	229.1	92.2	**356.7**
France	0	8.3	0	158.4	9	0.3	176	0	**175.9**
Germany	55	40	0	85	12	0	192	4	**196**
Ireland	0	2.5	0	3.4	0	0	5.9	39.8	**45.7**
Italy	0	0	0	57.6	0	0	57.6	0	**57.6**
Netherlands	3	2.2	0	9.5	44.8	0.3	59.8	0	**59.8**
Portugal	0	20.2	22.4	27.4	0	0.3	70.3	0	**70.3**
Spain	20.5	68	22.6	12.1	0	0	123.2	29.7	**152.9**
Sweden	27	48	125	46.2	0	10	256.2	12.5	**268.7**
United Kingdom	0	11.4	0	133.2	0	0	144.6	2.4	**147**
Estonia[1]	...	6.2	...	18.3	...	...	...	4.9	**29.4**
Latvia	1.6	4.3	0	10.2	0	0.4	16.5	3.6	**20.1**
Poland	39.8	0	0	18.4	6.2	0	64.4	1	**65.2**
Romania	0	9	2.5	40.5	0	0	52	87.3	**139.3**
Slovakia	3.8	3.3	6.4	2.7	0.03	0.06	16.29	0.004	**16.3**
Slovenia	0	4.1	0.1	7.1	0.1	0	11.4	0	**11.4**
Total	**188**	**337.1**	**340**	**698**	**79.8**	**18.2**	**1 661.1**	**292.4**	**1 953.6**

Notes: [1] No information available in comparable form. All figures are estimates.

Source: Vesterinen and Alakangas, 2001.

followed by wood industry residues and forest residues are the most important groups. When consumption is compared to the estimated European biomass resources, it seems that the largest potential is in forest residues and wood wastes.

Finland has a goal to achieve a five-fold increase in the volume of forest chips used annually for energy purposes from 1998 (0.5 million solid cubic meters) by the end of 2003. These would come from logging residues from regeneration areas because of their cost competitiveness. However to increase the use of forest chips, a further reduction of harvesting, processing and transportation costs are necessary.

The biomass consumption is divided by municipal users (for heating and power plants) and industrial users that are most often forest industries utilizing their by-products for their own energy production. In the latter case, black liquors are actually a part of the production process.

The bio-energy trade has increased rapidly during the past ten years and it includes among other things different types of wood materials. In many countries the customs statistics do not record trade in sufficient detail that different biomass types could be identified. However for the UNECE/FAO TIMBER database, data are recorded for both wood for raw material and wood for fuel. In many cases the national biomass market is not yet developed well enough for organized international trade. This trade is more or less occasional and not included in official statistics.

According to the study of Vesterinen and Alakangas (2001) most biomass volumes are traded from the Baltic countries to three Nordic countries, Denmark, Finland and Sweden. Biomass is also traded between neighbouring countries in central Europe. Most often the trade biomass is pellets and briquettes and such industrial by-products as sawdust and chips, the latter going for raw material furnish in particle board and pulp mills.

Some biomass trade is also intercontinental. Sweden imports biomass from Canada and Italy imports firewood from Northern Africa.

The prices of biomass fuels are usually local and vary across Europe. The average price for chips is 3

euro/GJ, for wood waste 1 euro/GJ, for industrial wood residues 2.4 euro/GJ, firewood 5.3 euro/GJ (Vesterinen and Alakangas, 2001). Pellets, which have additional processing costs, but are higher in energy per unit, are the most expensive at 8.4 euro/GJ. The European standardization and classification of different biomass type gives clear basis for price setting and improves possibilities of uniform statistics system in different countries.

6.4 "Other Europe" subregional developments

Roundwood market development is supported by ongoing economic reforms in the central and eastern European countries, "Other Europe". Many countries of this subgroup, for example, Estonia and Latvia, have increased their fellings significantly since 1997.

In comparison to the growth in CIS removals, roundwood production in "Other Europe" reduced by 0.6% in 2001. While it appears that Estonia was an exception, because its removals increased by 30%, this is actually the result of a different basis of estimates or roundwood removals[6]. Nevertheless, roundwood use has been growing in Estonia, where sawnwood and plywood production has doubled since 1997. In correlation with growing roundwood processing, Estonia's import quantities from Russia and other countries increased 68%, but exports fell 17% in 2001.

In "Other Europe", increasing production of forest products has also led to a steady increase in roundwood consumption. From 1998 to 2000 the increase in consumption quantity was 16%. In 2001 the fall of consumption was 1% due to reduced apparent consumption in almost all countries of the subregion.

Other Europe is clearly a net exporter of wood residues, chips and particles. Exports have grown from 1.8 million m^3 in 1997 to 3.4 million m^3 in 2001. Latvia and Estonia are the largest exporters in the subregion and over half of their exports consist of wood residues (67% and 62% respectively). For comparison, CIS countries have a minor role in the trade of these items.

6.5 CIS subregional developments

In the CIS, roundwood production growth was especially strong between 1999 and 2000. From 1997 to 2001 production grew annually in the CIS subregion by 12 million m^3 on the average. In 2001 the CIS was the only region, where removals increased. Despite the significant growth of CIS removals, they are still far below the peak level during the 1980s. In comparison to EU/EFTA subregion, roundwood export unit prices from CIS countries rose by 4% in 2001 due to the Russia's positive export price development.

Low cutting rates and inefficiencies in forest and forest industries sector have led the Russian Government to plan sector development through 2010. The goal in 2010 is to use the majority of increasing fellings in domestic processing to fulfil the growing domestic demand of forest products.

Nevertheless huge problems remain to be resolved before the world's largest forest resource is on the path to achieving its full potential in a sustainable way. Recently, there is evidence that forest and timber issues are being taken up at the highest levels of the Russian government. In early June 2002, President Putin told the Russian State Council that the decline of the forest industries over the past decade was a missed opportunity and called on lawmakers to improve legislation governing the sector. Prime Minister Kasyanov gave preliminary approval to draft proposals prepared jointly by the ministries of industry science and technology and of natural resources. A final plan for the sector's development should be ready by September

It is possible that the current expansion of Russian exports of roundwood is only a medium-term development, because in the long term, exports of further-processed products could increase if the Government's plans are achieved. Russia is currently the third largest industrial roundwood producer, at a 6% share of the world's harvest, and the Government expects to expand it in the long term. If the plans succeed in improving the country's forest utilization and industry production, future increases in the annual timber harvest, which is currently only 20% of its annual increment, would be necessary (*TTJ*, 2002).

The main reason for the expansion in the UNECE region export trade has been the increasing exports from the Russian Federation since 1997. Between 1997 and 2001, the average growth rate of Russian exports was 5 million m^3 per year and the growth in 2001 was 21%. The main reasons behind this growth have been lower prices, weakness of domestic conversion of roundwood as well as comparatively short transport distances from some eastern suppliers to western markets. In 2001 a 2% fall in domestic consumption increased the possibilities to raise exports of roundwood. Russian export unit prices of roundwood went up, by 5%, for the first time since 1996.

In the CIS countries the apparent consumption of industrial roundwood increased 60% from 1998

[6] Data received from Estonia after tables were made show a 14% rise in removals for 2001.

through 2001 following a fall of more than 20% from 1996 to 1998. This fall was due to weak domestic demand and problems in harvesting and transport of roundwood. Since 1998 forest industry has developed and more export revenues have been reinvested into the domestic production capacities.

6.6 North America subregional developments

North America has reduced roundwood production since 1999, which was far below the late 1980s peak. Harvests from federal and state lands in the United States have dropped by 50% since the late 1980s due to increasingly stringent environmental restrictions (*Wood Markets: 2002 Edition*). The shortfall was compensated partly by higher harvest levels on private and industrial forestlands. The 2001 decrease in North America of 3% in roundwood production is equivalent to the 2.9% decrease in consumption, due to reductions in United States sawnwood production and a large decrease in the continent's pulp and paper production. The United States removals dropped 3.8% in 2001, but this drop was partly compensated for by roundwood imports, which increased by the same percentage, but on a much lower volume. North America is still the leading producer of roundwood in the UNECE region, with 658 million m^3 annually. This is roughly 40% of total removals in the UNECE region and about 20% worldwide.

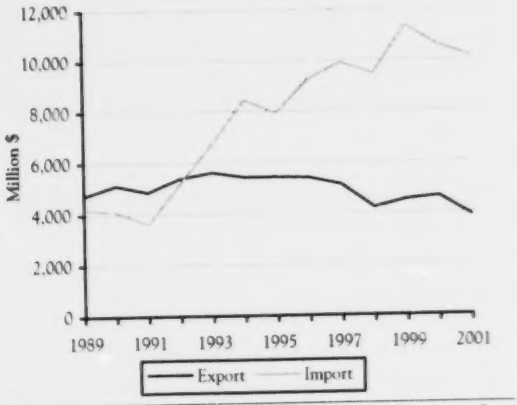
Prior to 1992, the United States was a net exporter of roundwood, sawnwood and panels combined. Since that peak in export values, at $5.5 billion, exports have declined gradually. In contrast, imports have skyrocketed (graph 6.6.1). Increasing population, a continuing boom in wooden house construction and increasing domestic processing costs, the strong dollar and the competitivity of suppliers, are behind this rise in imports.

Considering only softwood log production, the production amounts in the North America have decreased by 4% in 2001. Although this area is still dominating the global softwood log production (48% of global production) it is losing market shares to emerging, lower cost supply regions (IFR, 2002).

The North American subregion has been a stable net exporter of roundwood with the annual average of 5.7 million m^3 from 1997 to 1999. However, during 2000 and 2001 net exports reduced significantly, which can be linked partly to the harvesting and export restrictions on national forests in the United States. In 2001 the United States roundwood exports fell 4.5% and imports increased by 3.8%.

GRAPH 6.6.1

United States trade of primary wood products, 1989-2001



Note: Primary products are roundwood, sawnwood and wood-based panels.
Source: UNECE/FAO TIMBER database, 2002.

In North America, apparent consumption of roundwood has been decreasing since 1999. In 2001 consumption fell by 3% to 657 million m^3, mainly due to the reduced consumption of primary-processed products in the United States. Despite reductions in consumption, North America still consumes annually more than half (54%) of all roundwood consumed in UNECE region.

6.7 Conclusion

The wood raw materials market sector in Europe has stabilized following the removal and processing of the 200 million m^3 of windstorm-felled timber from the 1999 storms. Unfortunately some countries which were hardest hit by the storms will take decades to regenerate those forests, and that will have direct consequences on the livelihood of people and industries dependent upon those forests. Since the 1999 storms in western Europe, there have been subsequent windstorm damage in Estonia in 2001 and Turkey in 2002. The sad message is that windstorm damage is a reoccurring phenomenon in the UNECE region, and that each time the forest products markets will suffer some aberration.

In line with reduced primary- and secondary-processed product demand, the removals and trade of wood raw materials fell in the UNECE region in 2001. At its October 2001 annual market discussions, the Timber Committee forecast little change in 2002. It should be noted that the Committee's forecasts were tempered by the recent 11 September 2001 terrorist

attacks in the United States, which cast great uncertainty into economic forecasts at that time.

6.8 References

Recent developments in bioenergy sector in Europe. The European Agriculture and Forestry Biomass Network (AFBnet), 2000.

Energy Statistics 2000. Statistics Finland, 2001.

EUWID, various issues, 2002.

Vesterinen, P., and Alakangas E, *Export-import possibilities and fuel prices*. The European Agriculture and Forestry Biomass Network (AFBnet), Task 2, V. Altener programme, 2001.

Wood Markets Monthly, International Wood Markets Research Inc., R.E. Taylor and Associates, Ltd, Vancouver, British Columbia, Canada, 2002.

Wood Markets 2002, International Wood Markets Research Inc., R.E. Taylor and Associates, Ltd, Vancouver, British Columbia, Canada, 2002.

Chapter 7
Trends in sawn softwood markets[1]

Highlights

- Sawn softwood production in the UNECE region dropped almost 4% in 2001, following an all-time high of 225 million m^3 in 2000.
- Consumption of sawn softwood ended a 3-year period of growth in the UNECE region in 2001, with declines in all subregions except the CIS, where consumption in the Russian Federation rose slightly, by 3%.
- Nordic countries, Germany and Austria continue to see growth in sawn softwood trade outside of the EU/EFTA region, to Japan and more recently to the United States.
- Sawn softwood exports dropped in 2001 for both the EU/EFTA subregion (-3%) and the "Other Europe" subregion (-9%); however, exports from Canada remained steady.
- United States exports of sawn softwood were at decade-long lows in 2001, at roughly 1.5 million m^3 (compared to 5 million m^3 in 1991).
- United States sawnwood imports from South America and Europe are at an all-time high, totalling nearly 3 million m^3.
- Initiation of a 27.2% duty on sawn softwood imports from Canada to the United States enacted in May 2002 may have an impact on sawn softwood prices and on continued United States supply diversification.
- While Japan's import volumes of sawn softwood remain considerably below the 1997 peak of over 10 million m^3, it remains an important market for supplying regions globally, including Europe at the expense of North American market share (however mid 2002 strength in the euro could change this situation).
- Trade patterns in 2001 were influenced by the strong dollar, but the fall in value of the dollar against the euro and the yen will change the competitive position of exporters in 2002.

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Secretariat introduction

Traditionally one of the most important commodities traded in the UNECE region, sawn softwood is a barometer of market health in the UNECE region and the difference in trends between and within its subregions. The secretariat expresses sincere appreciation for this chapter's analysis to Drs. Rob Kozak, University of British Columbia, and Chris Gaston, Forintek Canada, both specialists in forest products markets. This is the second year that they have written this chapter. Their specialization of trade between the UNECE region and Asia comes to light in several passages. Dr. Gaston co-authored the earlier chapter in this *Review* on Chile's forest products markets. He is also the leader of the new UNECE&FAO Team of Specialists on Forest Products Markets and Marketing, and has presented his work at the Timber Committee's market discussions.

7.1 Introduction

The global production of sawn softwood in 2000 decreased marginally by 0.3% to just below 300 billion m³, from an all-time high in 1999[2]. The UNECE region, namely Europe, CIS[3] and North America, manufactures approximately three-quarters of this global total (table 7.1.1). Consumption levels for the UNECE region are generally down for 2001, with the most severe slowdowns being witnessed in European countries that do not belong to the EU/EFTA subregion and moderate gains being made by the Russian Federation (graph 7.1.1).

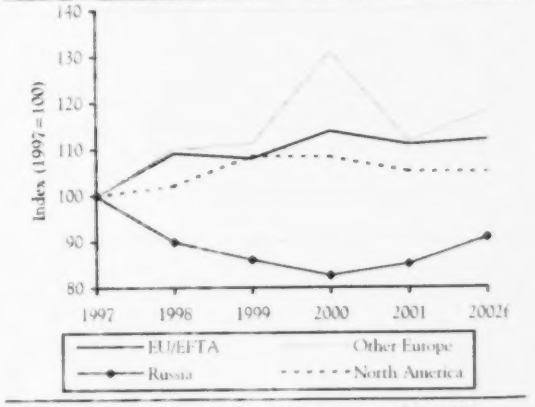
Overall, the production of sawn softwood in the UNECE region decreased across the board in 2001, after an exceptionally strong two year period of growth and expansion. Output from North America was down by 4.1%, marking the second consecutive year of decreasing production in this region. The EU/EFTA and "Other Europe" subregions experienced production losses of 1.7% and 9.1%, respectively. Within the UNECE region, the CIS was the only subregion to register stability, with 0.2% growth in the Russian Federation. These production woes are reflected in the levels of imports and exports in the UNECE regions, which are generally down or stagnant, with some exceptions being Denmark, Poland and the CIS (increased imports from a low level) and Slovakia (increased exports, assuming that data are comparable over time).

This chapter will look at production, consumption and trade of sawn softwood within the UNECE region in detail. As in previous years, information presented here is from the UNECE/FAO TIMBER database. North American sawn softwood statistics are presented for the first time in actual volumes. Canadian production and trade volumes and United States trade volumes were converted to actual dimension basis by applying the United States conversion factor of 0.7203 to estimate Canada's actual volumes from the nominal and in the case of exports, mixed actual and nominal volumes submitted (United States production data was submitted in actual measure, equivalent to European and CIS measure). All of the data presented here are for the year 2001, with one exception. At the time of writing this chapter, trade flow data for 2001 were not available and 2000 data were used in their place. Further information from industry associations, trade journals, consultants' reports and other official sources was used to supplement the existing data, and is cited in the references section at the end of this chapter.

Trade of sawn softwood is discussed for the four major softwood producing and consuming regions: EU/EFTA, "Other Europe", the CIS and North America. For each subregion, major trade patterns are also considered. In addition, trends in Japan are discussed because of its importance within the global sawn softwood marketplace.

GRAPH 7.1.1

Apparent consumption of sawn softwood in the UNECE region, 1997-2002



Note: f = The Timber Committee's forecast trend for 2001 to 2002, made at the October 2001 session, was applied to the 2001 figure.

Source: UNECE/FAO TIMBER database, 2002.

[2] Global statistics for 2001 were not available at the time of writing.

[3] The CIS countries reporting sawn softwood statistics included Republic of Belarus, Republic of Moldova and the Russian Federation.

TABLE 7.1.1

Sawn softwood balance in the UNECE region, 1997-2001

(Million m³)

	1997	1998	1999	2000	2001	Timber Committee estimate for 2002[1]
EU/EFTA						
Production	67.75	69.10	71.21	75.26	73.96	74.90
Imports	29.80	35.74	33.85	36.09	34.34	34.40
Exports	28.10	29.05	30.09	32.33	31.26	31.56
Net trade	-1.70	-6.69	-3.76	-3.76	-3.08	-2.85
Apparent consumption	69.44	75.79	74.96	79.02	77.04	77.74
Other Europe						
Production	15.36	16.52	17.50	19.91	18.09	18.60
Imports	2.15	2.38	2.87	3.28	3.08	3.41
Exports	7.42	7.80	8.84	9.68	8.79	8.93
Net trade	5.27	5.41	5.97	6.41	5.71	5.52
Apparent consumption	10.09	11.11	11.52	13.50	12.38	13.08
Russian Federation						
Production	16.68	15.61	16.64	17.46	17.50	18.33
Imports	0.33	0.01	0.00	0.00	0.00	0.00
Exports	4.78	4.63	6.13	7.37	7.10	7.24
Net trade	4.45	4.63	6.12	7.37	7.10	7.24
Apparent consumption	12.22	10.98	10.51	10.09	10.40	11.09
North America						
Production	104.86	105.11	111.70	110.53	106.02	106.60
Imports	31.20	31.83	32.81	33.26	34.20	34.25
Exports	37.31	36.06	37.18	37.19	36.60	37.34
Net trade	6.11	4.23	4.37	3.93	2.40	3.09
Apparent consumption	98.75	100.88	107.34	106.60	103.62	103.50

[1]The Timber Committee's forecast trend for 2001 to 2002 made at the October 2001 session was applied to the 2001 figure.

Source: UNECE/FAO TIMBER database 2002.

7.2 Europe

The general upswing of European consumption and production of sawn softwood (high quality sawnwood in particular) witnessed over the last few years came to a halt in 2001. This was unexpected by the UNECE Timber Committee, who witnessed a weaker than expected demand for sawn softwood products. Overall, consumption of sawn softwood in Europe fell by 3.4% (table 7.1.1), with some industry experts anticipating further decreases of 1.4% in 2002. While apparent consumption for 2001 is up by 3.1% in the Russian Federation (to 10.4 million m³), this increase is more than outweighed by decreases in the EU/EFTA subregion of 2.5% (to 77 million m³) and precipitous drops in the "Other Europe" subregion of 9.0% (to 12.4 million m³).

It is useful, however, to provide some context in viewing these decreased levels of consumption. Specifically, it should be noted that European consumption levels were exceptionally high in 2000 largely because of a good economy and heightened building activity. While the economy was muted somewhat in 2001, sawn softwood consumption has generally increased in the last five years in both the EU/EFTA and "Other Europe" subregions. One important exception to the trend is a 7% decrease in consumption in Germany, the largest consumer in the subregion. This was due to the downturn in German construction discussed in an earlier chapter.

That said, in spite of the 2001 downturn, it is estimated that sawn softwood production of the top producing countries in 2001 (Germany, Sweden, Finland, Austria, France and the Baltic countries, but

excluding Russia) will continue to rise in the medium term, possibly surpassing Canadian production for the first time. This is not surprising, given that exports from these eight countries have more than doubled over the last decade.

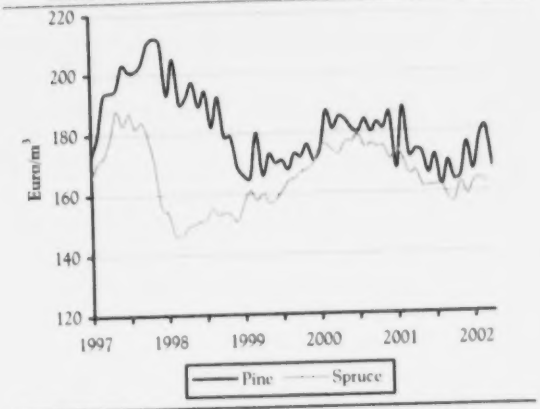
Several factors have contributed to the sawn softwood landscape in Europe. On the upside, several key European producers, Nordic countries, Austria and Germany in particular, continue to forge strong market ties with offshore markets in Asia and North America, and continued market growth is anticipated. In addition, construction activity in Europe was progressing as expected (moderate slow downs), with the exception of Germany, the largest market, which was in steep decline. For these reasons, the market for construction grade spruce remains mixed. That said, European construction activity is expected to slow even further in 2002 and 2003, further reducing the demand of sawn softwood. One bright spot on the horizon is the growth of multi-storey timber frame buildings, especially in the Nordic countries. Another positive sign is that the pine market remains stable, with consistent demand expected from the European value-added and furniture sectors.

However, there were also several hurdles that European producers of sawn softwood faced in 2001 and early 2002. For instance, there was an acute supply shortage of high quality logs, due in part to a glut of beetle-attacked and windthrown fibre, as well as forest owners waiting for higher sawlog prices. Some industry experts argue that this shortage may have lead to production reductions of 10% during 2001. In addition, there is a severe shortage of Nordic spruce as more and more Nordic producers are keeping their own stocks of high quality wood for domestic production and non-European markets, especially Japan. This has served to not only increase spruce prices across Europe (graph 7.2.1), but to open doors for competitor products ranging from steel to engineered wood products to factory-built housing.

As a result of construction slowdowns, consumption of sawn softwood decreased. European production also declined as a result of decreased logging owing to bad weather, heavy rains and flooding in 2001. Of particular note are the repercussions that have been felt throughout Europe in the wake of the catastrophic winds and hurricanes that occurred in December 1999. The hardest hit regions included France, Germany and Switzerland, and forests did not escape its wrath. Over 500,000 hectares of forests were damaged in Europe, with an estimated 300 million trees felled or the equivalent of almost 200 million m^3 of timber. This volume of fibre, equivalent to a three-year harvest in France, the hardest hit country, has had

GRAPH 7.2.1

Sawn softwood prices in Finland, 1997-2002



Source: Metinfo, Finnish Forest Research Institute, 2002.

a considerable impact on the market landscape for sawn softwood in Europe (see table on windstorm damages in the preceding chapter). Obviously, all of this timber could not be brought to the market in 2000 – this would only have served to cripple timber prices. As a result, excess roundwood was stockpiled and continually sprayed with water or otherwise protected to prevent attack from fungi and parasites. With federal Government-imposed harvesting restrictions, most of this wood quickly came on line as many local Governments enacted policies which provided support for forest landowners and mobilized infrastructure and transportation.

Lastly, question marks still surround two issues with respect to markets for sawn softwood: 1) the impacts that forest certification will have on the European marketplace; and 2) a proposed European ban on chromated copper arsenate (CCA)-based wood preservatives. In the former case, experts generally agree that the current shortage of certified sawnwood may lead to price increases in the near future. However, if and when more and more of the forests in Russia and the Baltics become certified, and have visible chain-of-custody, this will have a considerable impact on markets and prices (see chapter 11). In the latter case, there is a distinct possibility that CCA-treated wood products will be banned across Europe, following a similar line of action taken by the Environmental Protection Agency (EPA) in the United States. The EPA has effectively banned the use of CCA in the United States by the end of 2003, because of the "unreasonable risks to the public" posed by the arsenic contained within the preservative. This is expected to have a considerable impact on the markets for treated sawnwood products. In particular, the price of treated wood is expected to increase

TABLE 7.2.1

Production of sawn softwood in the UNECE region, 1998-2001

(1000 m³)

	1998	1999	2000	2001	Change 2000 to 2001	
					Volume	%
EU/EFTA	69 097	71 205	75 260	73 955	-1 305	-1.7
of which:						
Sweden	14 874	14 608	15 970	15 600	-370	-2.3
Germany	13 807	14 537	15 020	14 902	-118	-0.8
Finland	12 240	12 708	13 320	12 670	-650	-4.9
Austria	8 534	9 400	10 150	10 011	-139	-1.4
France	7 197	7 257	7 568	7 670	102	1.3
Other Europe	16 523	17 496	19 906	18 090	-1 815	-9.1
of which:						
Czech Republic	3 100	3 251	3 782	3 559	-223	-5.9
Latvia	2 800	3 047	3 320	3 195	-125	-3.8
Poland	3 538	3 349	3 532	2 850	-682	-19.3
Turkey	2 101	2 280	3 033	2 391	-642	-21.2
Romania	1 456	1 845	2 077	1 805	-272	-13.1
Estonia	780	1 100	1 346	1 536	190	14.1
Lithuania	900	850	1 000	950	-50	-5.0
CIS	17 133	18 292	19 782	19 763	-19	-0.1
of which:						
Russian Federation	15 610	16 635	17 460	17 500	40	0.2
North America	105 106	111 704	110 526	106 023	-4 502	-4.1
Canada	46 158	49 361	49 382	46 673	-2 708	-5.5
United States	58 948	62 343	61 144	59 350	-1 794	-2.9

Source: UNECE/FAO TIMBER database, 2002.

significantly in the short term, as viable alternatives to CCA-based wood preservatives are developed and implemented. Recent actions in Germany and Sweden have led many European timber traders to believe that a Europe-wide ban is not far off and, if such a ban is imposed, this no doubt will result in similar price increases for treated wood in Europe. This is yet another example of how environmental policies can affect timber markets.

7.2.1 *EU/EFTA subregion*

In 2001, production of sawn softwood in the EU/EFTA subregion of Europe (excluding the Nordic countries) remained fairly robust despite a general flattening of the economy (table 7.2.1). This is in stark contrast to the major production gains observed in the previous year. Output has decreased marginally in two major sawn softwood producing countries, Germany (down 0.8% to 14.9 million m³) and Austria (down 1.4% to 10.0 million m³). In addition, decreases are noted in Belgium, Ireland, Italy, Portugal and Switzerland. Production increases were seen in France (up 1.3% to 7.7 million m³), as well as in the United Kingdom (up 2.8% to 2.5 million m³).

As in 2000, the vast majority of the production in this region of Europe is used domestically or traded within Europe (table 7.2.3), with the exception of Austria and Germany, which continue to find success in the offshore markets of the United States and Japan. This represents a continuation of the movement towards self-sufficiency on the part of European producers in the wake of heated construction activity and value-added production. Despite this trend, the countries such as United Kingdom, Germany, France, Italy, Denmark and Spain still rely on imports of sawn softwood. In particular, the Nordic countries and, to a lesser extent, Canada and the United States, continue to be significant suppliers of sawnwood. In addition, Chile and Brazil continue to have a marked presence in Spain, the United Kingdom and Italy.

TABLE 7.2.2

Exports and imports of sawn softwood in the UNECE region, 1998-2001

(1,000 m³)

	1998	1999	2000	2001	Change 2000 to 2001	
					Volume	%
EXPORTS						
EU/EFTA	29 047	30 092	32 328	31 257	-1 071	-3.3
of which:						
Sweden	10 975	11 060	11 022	10 794	-228	-2.1
Finland	8 204	8 269	8 405	8 114	-292	-3.5
Austria	4 752	5 652	6 195	6 136	-58	-0.9
Germany	2 223	1 891	3 295	2 980	-315	-9.6
France	511	529	724	719	-6	-0.8
Belgium	...	602	678	595	-82	-12.1
Other Europe	7 796	8 840	9 685	8 792	-892	-9.2
of which:						
Latvia	2 250	2 447	2 635	2 417	-218	-8.3
Czech Republic	1 231	1 480	1 701	1 596	-105	-6.2
Romania	1 210	1 494	1 677	1 344	-333	-19.8
Estonia	690	816	912	944	32	3.5
Slovakia	735	681	683	616	-68	-9.9
Poland	705	722	785	522	-263	-33.5
Lithuania	501	517	619	521	-98	-15.8
CIS	4 898	6 699	8 593	8 303	-290	-3.4
of which:						
Russian Federation	4 632	6 125	7 373	7 099	-274	-3.7
North America	36 061	37 175	37 190	36 600	-590	-1.6
Canada	33 982	34 852	35 011	35 082	71	0.2
United States	2 079	2 323	2 179	1 518	-661	-30.3
IMPORTS						
EU/EFTA	35 739	33 847	36 089	34 338	-1 751	-4.9
of which:						
United Kingdom	6 490	6 604	7 308	7 180	-127	-1.7
Italy	5 274	5 551	6 304	5 948	-356	-5.6
Germany	5 301	4 705	5 522	4 103	-1 419	-25.7
Denmark	4 046	4 569	3 346	4 092	746	22.3
Netherlands	2 923	2 911	2 957	2 957	0	0.0
France	2 237	2 446	2 682	2 657	-24	-0.9
Other Europe	2 384	2 868	3 278	3 079	-199	-6.1
of which:						
Hungary	659	733	977	977	0	0.0
Israel	369	383	334	334	0	0.0
Yugoslavia	275	412	350	296	-55	-15.6
Poland	140	174	219	253	34	15.5
Lithuania	189	237	260	226	-34	-13.0
Czech Republic	158	169	219	226	7	3.2
CIS	211	659	979	1 042	63	6.4
of which:						
Russian Federation	6	4	4	3	-1	-25.0
North America	31 830	32 810	33 263	34 195	932	2.8
Canada	445	535	554	394	-160	-28.9
United States	31 385	32 274	32 709	33 802	1 093	3.3

Source: UNECE/FAO TIMBER database, 2002.

TABLE 7.2.3

Sawn softwood direction of trade, 2000

(1,000 m³)

Major Exporters	*Major Importers*													
	United Kingdom	*Italy*	*Germany*	*Netherlands*	*France*	*Denmark*	*Austria*	*Spain*	*Other Europe*	*Sub-TOTAL*	*United States*	*Japan*	*Other*	*TOTAL World*
Sweden	2 261	246	1 506	891	460	1 305	30	606	1 361	8 666	161	715	1 646	11 188
Finland	1 342	218	873	569	727	566	108	216	444	5 063	54	847	2 441	8 405
Austria	11	3 945	629	20	7	0	-	2	39	4 653	155	564	823	6 195
Russian Federation	552	384	520	468	374	90	169	164	558	3 279	28	802	3 264	7 373
Latvia	1 745	10	263	163	97	72	1	40	105	2 496	11	20	108	2 635
Germany	35	276	...	190	342	43	316	46	297	1 545	184	31	15	1 775
Czech Republic	16	286	558	16	1	0	606	2	53	1 538	58	48	57	1 701
Poland	13	62	422	110	26	43	17	35	41	769	0	1	15	785
Estonia	261	11	137	87	125	36	6	10	80	753	2	7	150	912
Romania	0	47	40	4	7	0	36	17	447	598	0	0	1 078	1 676
Sub-Total	6 236	5 485	4 948	2 518	2 166	2 155	1 289	1 138	3 425	29 360	653	3 035	9 597	42 645
Canada	264	80	52	50	36	4	0	3	115	604	42 285	5 134	905	48 928
United States	30	74	46	11	42	2	0	171	31	407	...	710	2 104	3 221
Chile	51	4	0	3	0	0	0	27	4	89	575	540	474	1 678
Brazil	15	32	1	12	13	0	0	95	13	181	674	4	417	1 276
New Zealand	4	0	0	0	0	0	0	0	0	4	353	270	894	1 521
Other	524	512	13	31	419	137	179	700	1 176	3 691	870	0	1 229	5 790
TOTAL World	7 124	6 187	5 060	2 625	2 676	2 298	1 468	2 134	4 764	34 336	45 410	9 693	15 620	105 059

Note: AUT = Austria, BEL = Belgium, BRA = Brazil, CAN = Canada, CHE = Switzerland, CHL = Chile, CHN = China, CZE = Czech Republic, DEU = Germany, ESP = Spain, EST = Estonia, FIN = Finland, FRA = France, GAB = Gabon, GBR = United Kingdom, HRV = Croatia, HUN = Hungary, IDN = Indonesia, ITA = Italia, JAP = Japan, KOR = Republic of Korea, LVA = Latvia, MAL = Malaysia, MEX = Mexico, MYS = Malaysia, NLD = Netherlands, NOR = Norway, NZL = New Zealand, PNG = Papua New Guinea, POL = Poland, P.o.C = Province of China, PRT = Portugal, RUS = Russian Federation, SVK = Slovakia, SWE = Sweden, THA = Thailand, USA = United States, ZAF = South Africa.

Source: UN COMTRADE/EFI, 2002.

Sawn softwood production in the Nordic countries for 2001 was down across the board from the high levels seen in 2000 (table 7.2.1). Finland's record production levels of 2000 have decreased by 4.9% to approximately 12.7 million m^3, while Sweden has seen decreases of 2.3% to 15.6 million m^3. Norway too has seen its production eroded by 1.2%, continuing a slight five-year downward trend. However, Norwegian production destined for domestic and European markets is facing stiff challenges, especially in export markets as interest rates have increased and the Norwegian krona has strengthened. Still, overall production in the Nordic countries remains robust, with sawn softwood production levels in Sweden and Finland generally higher than the output for the period between 1997 and 1999. The decreases in sawn softwood production for the Nordic countries correspond with a general rationalizing and downsizing of the industry as the global economic picture continues to worsen. For example, in Sweden the number of mills producing more than 5,000 m^3 annually has decreased from 300 five years ago to 240 today as consolidation continues. In addition, increased competition from central Europe and Russia resulted in downward pressure on prices and decreased profits in 2001, although prices for spruce and pine are seen to be recovering in 2002 (see graph 7.2.1). Although the overall number of sawmills is decreasing, this has been mitigated somewhat by larger sawmills increasing their production levels as well as an increased focus on value-added manufacturing, specialty products and service provision by vertically integrated interests. For these reasons, higher proportions of spruce stocks are being kept within the Nordic countries either for domestic consumption or for exports of glue laminated timber (or components) to Japan.

Despite these production setbacks, Sweden and Finland remain the two highest volume exporters of sawn softwood in Europe, with 2001 export levels of 10.8 and 8.1 million m^3, respectively (table 7.2.2). That said, exports in 2001 have decreased by 2.1% in Sweden and 3.5% in Finland to the lowest levels since 1997. While the major export destinations of Nordic sawn softwood continue to be within Europe, exports to central Europe and the United Kingdom are generally stagnant as competition from "Other Europe" producers, especially the Baltic States, and Russia continues to gain momentum. The emerging expansion of Nordic sawn softwood market share into offshore markets like Japan and the United States continues to make great strides, with sales into these markets exceeding the impressive gains made in 2000. In 2001, Nordic countries exported 420,000 m^3 and 1,600,000 to the United States and Japan, respectively.

7.2.2 *Other Europe subregion*

"Other Europe" producers of sawn softwood (including the Baltic countries as detailed below) continue to maintain a market presence, accounting for nearly 20% of the total European output or approximately 18 million m^3 (table 7.2.1). Overall, 2001 production from these regions is down 9.1% over the previous year, with the largest losses being seen in the central and eastern European nations of Poland (down 19.3%) and Romania (down 13.1%), as well as in Turkey (down 21.2%). The other major producer, the Czech Republic, fared somewhat better with production decreases of only 5.9%. It is useful to put these results into perspective by noting the massive gains in sawn softwood production made in 2000. This was especially prevalent in eastern Europe as these countries began to accelerate out of the transition period and re-establish themselves as key producers of sawn softwood by building up infrastructure and developing their sawmill sectors. Similar trends are noted for lower volume producers of sawn softwood like Slovakia, Slovenia, Bulgaria and Hungary.

While the Baltic countries make up more than half of the total sawn softwood production in eastern Europe, the remaining eastern European countries have significant production totalling 9.6 million m^3 for 2001. However, in terms of exports, the non-Baltic eastern European producers have significantly lower levels than those of Latvia alone (table 7.2.2). That said, the Czech Republic and Romania continue to be actively involved in export markets – mostly within Europe – with volumes of 1.6 m^3 and 1.3 million m^3, respectively. However, much of the decreased production of sawn softwood in eastern Europe can be attributed to western European export markets falling off. In 2001, the Czech Republic, Romania and Poland experienced decreases in export volumes of 6.2%, 19.8% and 33.5%, respectively. These declines in the "Other Europe" subregion can be explained in large part by the precipitous drop of 7.1% in German apparent consumption in 2001. In 2000, exports from "Other Europe" regions grew at a more rapid rate than the EU/EFTA countries (9.5% versus 7.4%). In 2001, the rates of decline in exports were more divergent, down 3.3% for EU/EFTA and down 9.2% for "Other Europe".

7.2.2.1 *Baltic countries*

Sawn softwood production in 2001 has increased slightly in the Baltic countries together, but varied by country (table 7.2.1). Output from the major producer, Latvia, fell by 3.8% from the previous year to 3.2 million m^3. Similar trends were observed in Lithuania, where production was down 5.0% to 950,000 m^3

because of changes in log supply related to the 1999 windstorms. In early 2000 following the storm, damaged spruce was removed quickly from forests to avert insect infestation (to both windthrown timber, and adjacent healthy stands). The drop in quality sawlog supply translated into a loss in production.

However in contrast, Estonia's production increased in 2001, by 14% or nearly 200,000 m^3, based on a national estimate. This means that Estonian production of sawn softwood has doubled over the last four years, to reach 1.5 million m^3. It is difficult to gauge any long-term trends in this region, as production levels from year to year have been extremely volatile. Some of the volatility is due to availability of domestic logs because of the on-going restitution of private forestland, and the other part depends on the availability of logs from the CIS, mainly Russia.

A major factor impacting Baltic production in mid-2001 has been the heavy rains, which effectively slowed logging down in this region, leaving mills with a shortfall of higher-priced sawlogs and decreased shipments. In addition, intense competition from the Nordic countries has resulted in further downward price pressures and mill shutdowns. That said, Baltic countries continue to have a marked competitive advantage over Nordic countries in some markets in that their strategic focus is still on the production of lower-priced unseasoned and ungraded sawn carcassing (which face possible phytosanitary restrictions). The United Kingdom remains the major destination for this non-dried wood, despite sector-wide efforts to move towards kiln-dried and value-added timber products. While exports of sawn softwood from Latvia and Lithuania have decreased substantially (down 8.3% and 15.8%, respectively), Estonia has made gains in the order of 3.5%, bringing its 2001 exports up to an all time high of 944,000 m^3 (table 7.2.2). The major importing countries for Baltic timber remain the United Kingdom, Germany, Netherlands and France. However, markets for sawn softwood in these countries, with the exception of the United Kingdom, are weakening with a general softening of the economy in many parts of Europe.

The Baltic countries have also exported sawnwood to the North America. For Lithuania, growing North American exports, 24% share in 2001 (and based on first 5 months of 2002, a 28% share), have been second only to Germany. "North America" must be specified, because an increasing share is being exported to (or through) Canada because Lithuania's largest sawmill, Pajurio Mediena, is Canadian-owned. The 40% increase in Lithuanian exports to North America must be combined with a 60% increase to the United Kingdom, the third export destination. Part of the reason for this increase is due to a more favourable currency exchange since 1 February 2002 when the Lithuanian litus (LTL) was pegged to the euro at 1 euro per 3.45 LTL, rather than the former standard, the United States dollar which was $1 per 4 LTL. Lithuania's exports fell heavily in 2001, by 15.8%, due to two reasons: 1. changes in log supply, and 2. growing exports of value-added products (joinery, pallets and pre-fabricated houses) (Lithuanian Centre of Forest Economics, MEC). The Lithuanian Centre of Forest Economics expects exports to rebound in 2002, by 10 to 20%, owing to: 1. favourable exchange rates, 2. good demand from the United States and United Kingdom, and 3. satisfactory log supply, supplemented by more windstorms in January and July 2002, with 0.5 million m^3 damage in spruce stands.

Estonian exports could also increase in 2002, based on first quarter statistics reports showing exports to United Kingdom up 20%, to Egypt down 18% and to Germany up 100% (these were Estonia's 3 major markets in descending order in 2001) (*EUWID*, 2002). Conversely, Latvia's exports decreased in the first quarter of 2002, by 10%, down to 518,000 m^3 (*EUWID*, 2002). In 2001, Latvia's major export destinations, in descending order, were the United Kingdom, Germany, the Netherlands, Egypt, Denmark, Ireland and France. Japan imported 35,000 m^3 from Latvia in 2001, up from 22,000 m^3 in 2000. The fall in first quarter exports from Latvia is attributed to a log shortage following a large increase in sawmilling capacity (*EUWID*, 2002). This was confirmed by an increase in imports of spruce sawlogs from Lithuania in the first quarter of 2002 by the Lithuanian Centre of Forest Economics.

Some major trends in the Baltic countries worth noting include the fact that these regions continue to import lower cost Russian logs to supplement their own domestic supplies. These volumes may increase as there is talk of lowering transportation costs (in Latvia, for instance) through a liberalization of tariffs. The rationalization of sawmills that was prevalent in 2000 when smaller, less-efficient mills were sold off to larger joint ventures, continued in 2001. For example, a vertically integrated partnership between enterprises in Latvia, the United Kingdom and Russia is currently being discussed and would incorporate state-of-the-art German technologies in the manufacture of pine timber products. Lastly, there has been a general strengthening of the Baltic economies, which are candidates for European Union membership. This, no doubt, would serve to improve their market presence for sawn softwood.

7.2.3 *Intra Europe trade (including CIS)*

Approximately 69% of all European imports (29.3 million m^3) of sawn softwood originated within Europe (including the CIS subregion) in 2000[4], which represents an increased volume of 2% over the previous year. However, the amount of sawn softwood that was traded within Europe as a proportion of total production decreased from a level of 71% in the previous year. This anomalous result can be easily explained by the fact that the year 2000 saw production increases across the board coupled with the emergence and growth of markets for sawn softwood outside of Europe (the United States and Japan in particular). Increased levels of intra Europe trade are currently not expected for three reasons: 1) continued successes with new found offshore markets; 2) the flattening out of the European economies; and 3) an increasing trend towards self sufficiency as countries move further and further up the wood products value-chain to meet domestic demand for consumer products.

The major exporting countries remain Sweden, Finland and Austria, followed by the Russian Federation, Latvia and Germany. The major importing countries for wood originating in Europe were the United Kingdom, Italy and Germany (table 7.2.3, inner box). Not surprisingly, intra European trade flows are geographically based with much of the Nordic shipments going to the northern part of Europe (United Kingdom, Germany, Netherlands and Denmark) and Austrian shipments finding markets within close proximity (Italy and Germany). An interesting trend carrying over from previous years is that some European regions, the Nordic countries in particular, are shipping some of their higher quality wood to more lucrative offshore markets resulting in a supply shortage of the highest-quality sawnwood for intra Europe trade. This has been offset somewhat by major sawnwood producing regions procuring logs from the Russian Federation and the Baltic countries to serve the rest of the "European" marketplace. This trend is expected to change as Russia and the Baltic countries are strategically poised to move up the value-chain by increasing their domestic production of higher value timber products. Currently, Russian and the Baltic countries have maintained sizable markets in the United Kingdom, Germany and France, with Russia also serving Italy and the Netherlands.

Austria, the third largest intra Europe exporter, continues to maintain a large market presence in neighbouring Italy and in Germany. Germany is one of the leading European producers of sawn softwood, but it continues to trade proportionately little of its production, opting instead to bolster its own domestic production of sawnwood, value-added wood products and furniture. Lastly, growth of the "Other Europe"an sawn softwood producers continues to be robust, with the Czech Republic maintaining its strong market presence in Germany and Austria, Poland concentrating on Germany and the Netherlands and Romania creating successful market niches by supplying several smaller markets within Europe like Hungary and Greece.

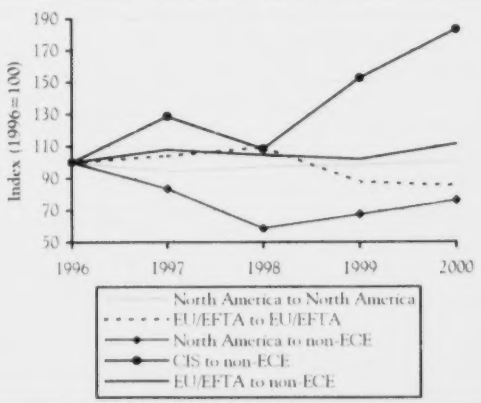
The UNECE region trade of sawn softwood represents 84% of the global trade. The greatest change in trade flows has been the increased trade from the CIS subregion to non-UNECE regions (graph 7.2.2).

7.2.4 *European trade with Japan*

Sawn softwood exports from Nordic countries, Austria, and Germany continue to witness impressive gains in Japan. This has been due, in part at least, to favourable exchange rates relative to competing regions of North America. It will be very interesting to see if this will remain to be the case given recent increases in the euro relative to United States /Canadian currencies. For a more detailed analysis of Japanese sawn softwood import trends, see section 7.5.

GRAPH 7.2.2

Major sawn softwood trade flows in the UNECE region, 1996-2000



Source: UN COMTRADE/EFI, 2002.

[4] It should be noted that at the time of writing this chapter, 2001 trade flow data were not yet available. This particular analysis relies on 2000 data from the FAO *Forest Products Yearbook*, 2000. Note that the EU/EFTA, "Other Europe" and the CIS subregions have been incorporated into the analysis on intra Europe trade.

7.3 CIS subregion

CIS countries continue to undergo significant structural changes since the fall of the USSR, and the sawn softwood industry is by no means immune to these uncertainties. The largest producer of sawn softwood, the Russian Federation, remains in a slump relative to the huge volumes that were produced in the late 1980s and early 1990s. However, marginal gains have been made in sawn softwood production for 2001, with output increasing by 0.2% over 2000 to 17.5 million m^3, a new five year high. In addition, some regions within Russia, Siberia in particular, are thriving with reported production gains exceeding 25% (suggesting that the overall increase in the Russian Federation is not uniform between all regions). While Russian exports of sawn softwood are down 3.7% over 2000 to 7.1 million m^3, these levels are an improvement over those seen in the mid-1990s and exports remain an integral part of the Russian sawn softwood industry (third only on the European continent to Sweden and Finland). Furthermore, according to Russia's Ministry of Natural Resources, export profits are estimated to be up by 12% over 2000, partly due to a weaker rouble. This trend is expected to continue as more and more Russian production is bound for Chinese and Japanese markets. This will continue to complement Russia's maintained presence in established European markets (the United Kingdom, Germany, Netherlands, Italy and France) and other CIS countries, where demand is expected to remain strong.

Despite increases in sawn softwood production and exports from the Russian Federation, there is a general consensus that the sawmilling sector is in need of capital expansion and technology improvement (to replace outdated equipment) in order to sustain growth over the long term. Furthermore, there is an urgent need for restructuring of the timber sector and improved management systems. There are encouraging signs within the Russian Federation, not the least of which are initiatives to move up the value-chain from commodity wood products to finished and specialty products and to increase logging capacity through infrastructure improvement, better forest management practices and a crackdown on illegal logging. In addition, continued inward and foreign investment remains strong, with several new pilot projects and joint ventures currently underway. Lastly, according to the Russian government sources, production costs for Russian timber are currently less than Nordic or North American sawn softwood for a variety of reasons. Some of these cost savings can be attributed to the fact that Russian forests are not yet certified. The Government has stated that certification of Russian forests is imminent in so much as it is a requirement to entry into the export marketplace. In fact, the Russian Federation, as in previous years, is poised to recover its position as a major competitive force with the potential to have a significant impact on global production, consumption and trade patterns of sawn softwood. To that end, there have been recent expressions of intent at the highest political level in achieving the full potential of Russia's timber sector.

7.4 North America

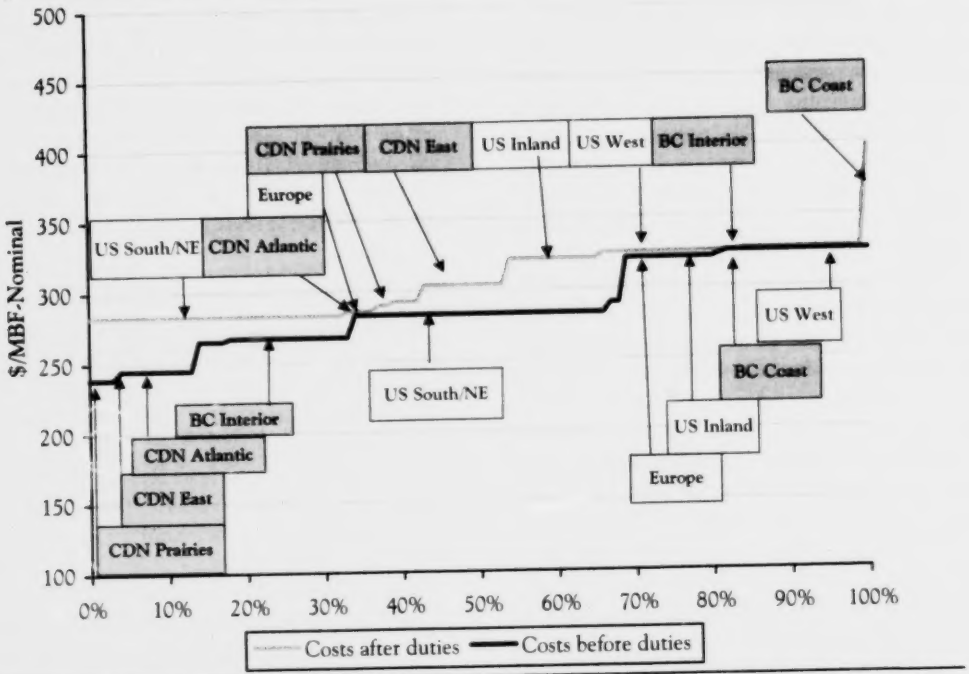
With annual Canadian exports to the United States of over 30 million m^3, North America with total exports of 36.6 million m^3 remains the largest trading block for sawn softwood in the world (followed by EU/EFTA at 31.3 million m^3 of exports). Fuelled by the continued strength of the United States economy, sawn softwood exports from Canada to the United States again made all-time highs in 2001, for the 4th year in a row. Given the combined tariff (countervailing and anti-dumping) of 27.2% on sawn softwood under the new Canada / United States Softwood Lumber Trade Agreement (SLTA), effective as of the end of May 2002, it will be most interesting to see how much shipments will be affected for the year. It will also be interesting to see the degree to which the United States continues to diversify their supply, primarily with South American and European sawnwood.

With the announcement in March 2002 by the United States Department of Commerce that the countervail rate would take effect on 22 May 2002, a flurry of Canadian exports of sawn softwood was witnessed. Shipments exceeded 15.5 million m^3 for January through April, up 7% from the same period last year for an all time record (the 1997 to 2001 average was 13.7 million m^3). In addition for the same period from 2000 to 2001, the United States West saw a 9% production increase, the United States South saw a 7% increase, and non-Canadian imports increased by 55%. It is, therefore, not surprising that the United States found itself in an over-supply situation, leading to softening prices, in spite of continued strong demand. Housing starts for January to May 2002 are 4% above 2001's already impressive starts for the same period.

In the period of time between 22 May and 28 June 2002, the Canada Department of Foreign Affairs and International Trade has reported that Canadian shipments of sawn softwood have dropped 25% compared to the same period in 2001. Regionally, the decreases were 17% for British Columbia, 45% for Ontario, and 49% for Quebec. Note, however, that

GRAPH 7.4.1

Forecast price consequences of the Canada/United States Softwood Lumber Trade Agreement, 2002



Note: Prices are delivered to the United States on a 2x4 basis. CDN is Canada. BC is British Columbia. NE is the northeast region of the United States. MBF is thousand board feet. % = of United States sawn softwood consumption (53.7 billion BF).

Source: R.E.Taylor & Associates, Ltd, 2002.

much of this drop can be attributed to the heightened shipments leading up to the 22 May initiation of the agreement. The real test of the effect of the duties on trade will be most felt during the seasonal autumn slowdown in United States housing construction.

Canada has appealed the United States duty levy with the World Trade Organization, whose interim report is due out in July 2002. It is generally felt that, if the WTO findings favour Canada's position, it may pave the way to rekindle a negotiated settlement between the two countries. Canada has also filed appeals with a North American Free Trade Agreement panel, but their findings are not expected before sometime in 2003. Regardless of the outcome, it is likely that Canadian producers will continue to lower their reliance on the United States commodity sawn softwood market, in part geographically, but mostly through further processing / value-addition of United States bound products within Canada.

It is worth noting that under the SLTA there will be a change in the cost structure of the regional supply areas within North America as forecast by R.E. Taylor & Associates (graph 7.4.1). The United States South becomes the low-cost producer, and the British Columbia Interior (which represents over 40% of Canadian sawn softwood supply to the United States) becomes a high-cost producer. Note that their cost structure estimates suggest a flatter supply curve; i.e., a given change in price of sawn softwood now leads to a greater supply response.

Some key trends in North America merit mention:

- Overall, apparent consumption of sawn softwood in North America continues a three-year decreasing trend. In 2001, consumption was down by 3.0% over the previous year for a total of 103.6 million m^3 (table 7.1.1).
- Canadian exports of sawn softwood continue to be dominated by spruce-pine-fir dimension lumber[5] to the United States, primarily used for housing construction and renovation. While there remained an overall rise in Canadian sawn softwood exports in 2001, gains in the shipments

[5] "Dimension lumber" is standard-sized construction sawnwood, e.g., 2 x 4s.

to the United States mask a drop in shipments to Japan (graphs 7.4.2 through 7.4.5).

- Canadian exports of further-processed sawn softwood, including mouldings, flooring, siding, cabinetry, millwork, builders' joinery, and wood furniture has grown dramatically during the 1990s (graph 7.4.6 shows this growth for builders' joinery, pre-fabricated components, and other products included in HS Code 4418.90).
- North America continues to enjoy considerable price premiums in offshore markets for sawn softwood, particularly Japan and Europe. This reflects a change in the product mix from construction sawnwood to higher-valued appearance sawnwood.
- United States exports of sawn softwood have declined dramatically over the 1990s, with 2001 levels at record lows of only 1.5 million m^3 (graphs 7.4.7 through 7.4.10). This trend in changing United States sawnwood production has been due to strong domestic demand and roundwood supply reductions in the United States West in the early 1990s (table 7.4.1).
- United States imports, while dominated by Canadian supply, are increasingly being diversified to other sources (graphs 7.4.11 through 7.4.13), most notably plantation-based sawnwood from South America and New Zealand. Nordic countries' supply of sawn softwood continues to make inroads into this large market, as does timber from other parts of Europe, most notably Germany and Austria (see the "other" category in graph 7.4.12). Diversification of United States import sources continued increasing from January 2002 to April 2002 compared to the same period one year earlier (table 7.4.2).
- United States sawn softwood usage has changed over the last decade with more sawnwood going into new residential construction, both in volume and percentage terms. Industrial wood usage, e.g., for pallets, has remained constant at approximately one quarter of sawnwood use. Estimates by the USDA Forest Service indicated that the manufacturing slowdown in the United States in 2001 resulted in a drop of approximately 0.8 million m^3 in sawnwood consumption from this "industrial wood usage" category (table 7.4.3).

TABLE 7.4.1

United States sawn softwood production by region, 1988, 1995 and 2001

(Million m^3, nominal, %)

	1988		*1995*		*2001 (preliminary)*	
West	50.6	56%	34.2	45%	36.8	45%
South	29.9	33%	34.7	46%	37.0	46%
Other	9.5	11%	7.2	9%	7.7	9%
TOTAL	90.0	100%	76.1	100%	81.5	100%

Note: Table volumes in nominal dimensions do not match UNECE/FAO TIMBER database tables' volumes.

Source: Resource Information Systems, Inc., 2002.

TABLE 7.4.2

United States imports of sawn softwood, January – April, 2001 to January – April, 2002

(% change)

Germany	236%
Sweden	141%
Austria	84%
Russia	250%
Argentina	175%
Chile	26%
New Zealand	16%
Canada	7%
Total non-Canada	55%

Source: U.S. Department of Commerce, 2002.

TABLE 7.4.3

Sawnwood usage sectors in the United States, 1991 and 2001

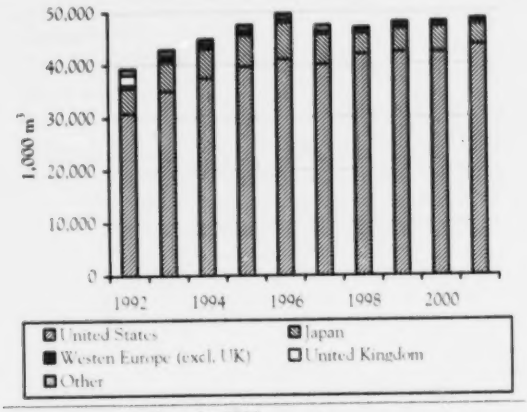
(Million m^3, %)

	1991		*2001 (estimated)*	
New residential construction	33.3	34%	54.4	41%
Repair and renovation	34.2	35%	38.4	30%
Non-residential construction	6.6	7%	5.8	5%
Industrial wood usage	24.5	24%	29.7	24%
Total	98.6	100%	126.3	100%

Source: Resource Information Systems, Inc., 2002.

GRAPH 7.4.2

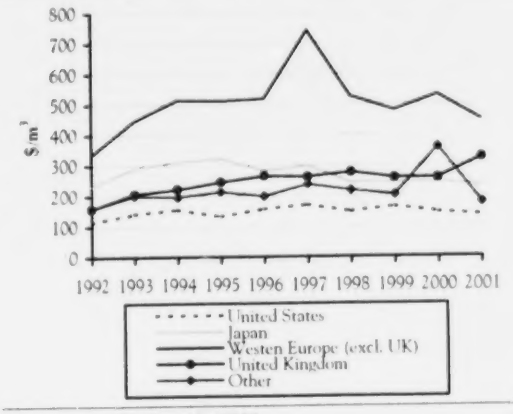
Canadian exports of sawn softwood, by destination and volume, 1992-2001



Source: Statistics Canada, 2002.

GRAPH 7.4.3

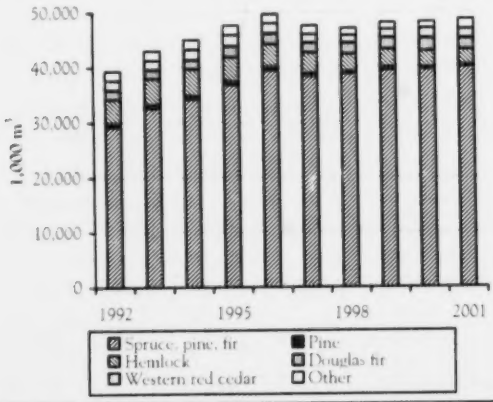
Canadian exports of sawn softwood, by destination and unit value, 1992-2001



Source: Statistics Canada, 2002.

GRAPH 7.4.4

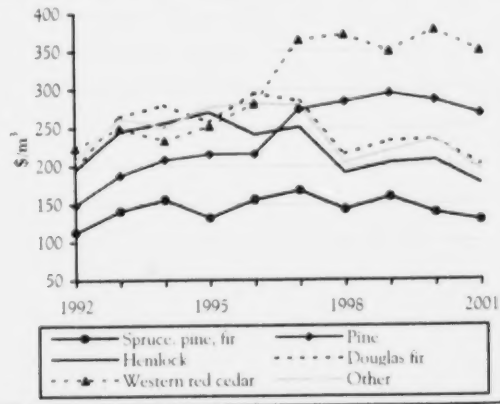
Canadian exports of sawn softwood, by species and volume, 1992-2001



Source: Statistics Canada, 2002.

GRAPH 7.4.5

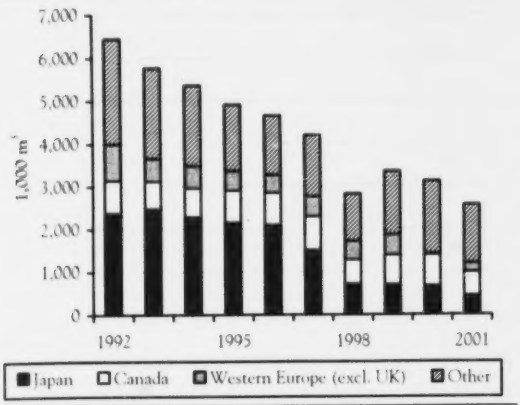
Canadian exports of sawn softwood, by species and unit value, 1992-2001



Source: Statistics Canada, 2002.

GRAPH 7.4.7

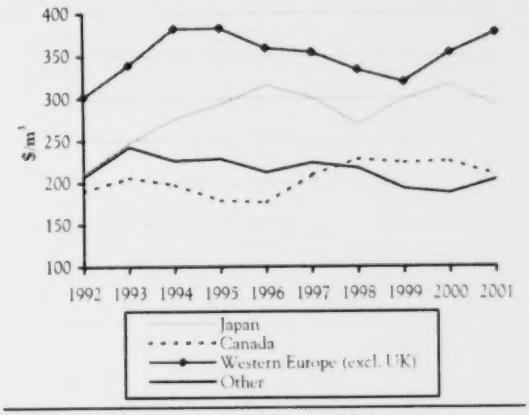
United States exports of sawn softwood, by destination and volume, 1992-2001



Source: United States Bureau of Census, 2002.

GRAPH 7.4.8

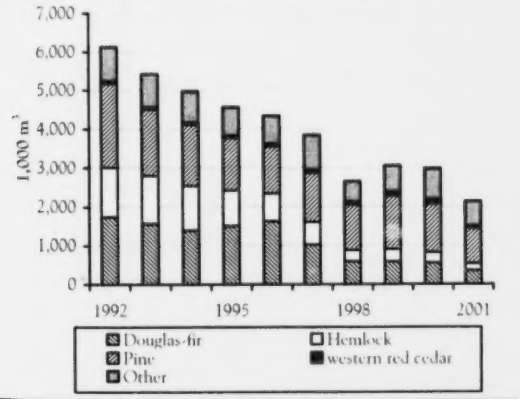
United States exports of sawn softwood, by destination and unit value, 1992-2001



Source: United States Bureau of Census, 2002.

GRAPH 7.4.9

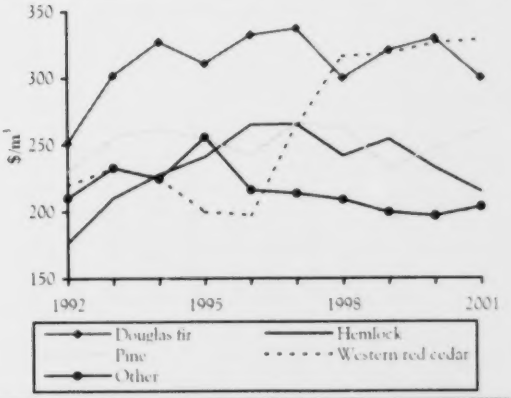
United States exports of sawn softwood, by species and volume, 1992-2001



Source: United States Bureau of Census, 2002.

GRAPH 7.4.10

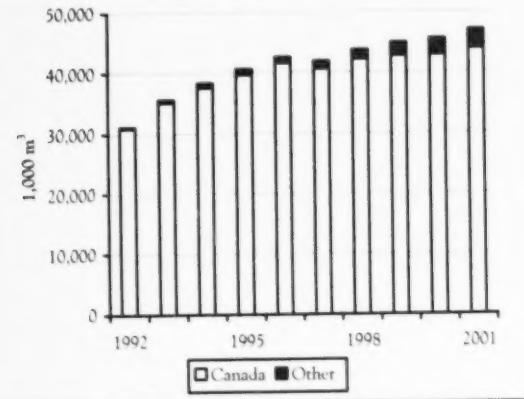
United States exports of sawn softwood, by species and unit value, 1992-2001



Source: United States Bureau of Census, 2002.

GRAPH 7.4.11

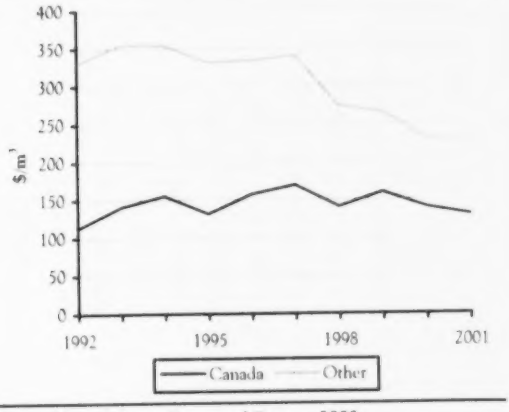
United States imports of sawn softwood, by source and volume, 1992-2001



Source: United States Bureau of Census, 2002.

GRAPH 7.4.12

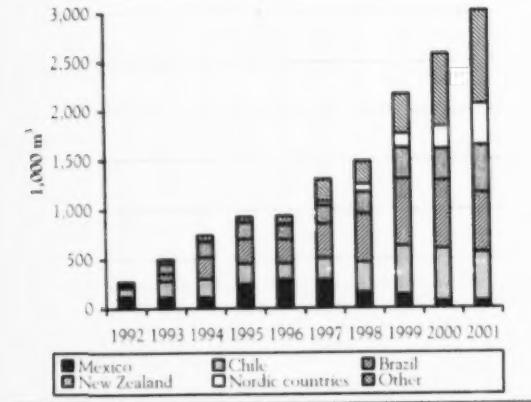
United States imports of sawn softwood, by source and unit value, 1992-2001



Source: United States Bureau of Census, 2002.

GRAPH 7.4.13

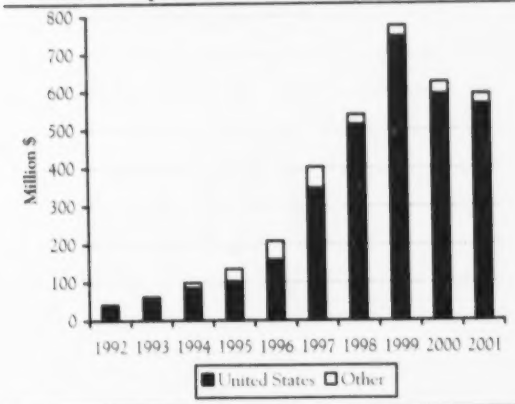
United States imports of sawn softwood (less Canada) by source and volume, 1992-2001



Source: United States Bureau of Census, 2002.

GRAPH 7.4.6

Canadian exports of builders joinery, 1992-2001



Source: Statistics Canada, 2002.

7.5 Japan

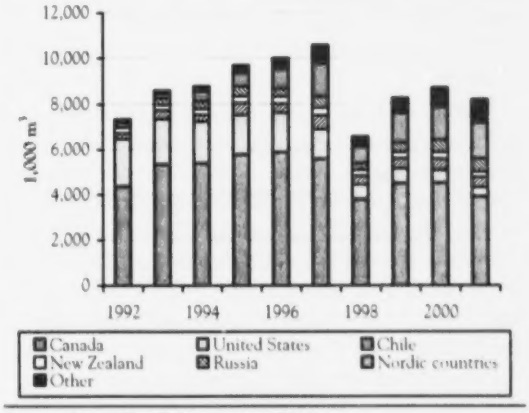
The demand for sawn softwood is dominated by three regions globally; North America, Europe and Japan. Like North America, Japan has a long history of building wooden single family homes outside of the large urban centres, and this represents the major end-use of Japan's domestically produced and imported sawn softwood. Unlike North America, however, there is little repair and renovation wood use, although this is beginning to emerge[6]. Wood for interior applications represents the next largest wood use.

Some key trends in Japan worth noting:

- While overall sawn softwood imports have increased since the 1998 political and economic crisis lows, Japan's economy remains sluggish, and housing starts are not expected to return to their 1990s peaks.
- Nordic countries, Austria and Germany have gained impressive market share for sawn softwood, approaching 2.5 million m^3 in 2001 (graph 7.6.1 and 7.6.2 (note Austria and Germany make up the largest portion of "other")). This has mostly been at the expense of United States' supply. Canada's market share has been fairly stable by volume, due in part to the favourable exchange rate compared to the United States dollar.
- Price premiums remain at modest levels for North American sawn softwood compared to Nordic countries' sawn softwood (average prices over all species; Nordic countries' shipments are dominated by a single species, spruce). Price discounts remain for sawn softwood from New Zealand (primarily radiata pine) and Russia (see graph 7.6.2.).
- Japan continues to move towards pre-cut components for its home building, which has greatly reduced its demand for green sawn softwood in favour of kiln-dried sawnwood.
- The use of glulam continues to rise dramatically. This point, combined with the previous point and the fact that Japan has a shortage of drying capacity, have created a large demand for kiln-dried sawn softwood as furnish for domestic glue laminated production ("lam stock"). In fact, a large proportion of the sawn softwood imported from Europe is for this end use.
- More than ever before, Japan has become incredibly price conscious, both for structural wood products and for interior finish components. For the latter, this has included a much greater use of veneer-wrapped edge-glued panels as opposed to the more traditional clear, solid sawnwood. The overall volume of sawn softwood use is not expected to change significantly in the coming year, but the product mix (and possibly source) is expected to continue its evolution.

GRAPH 7.6.1

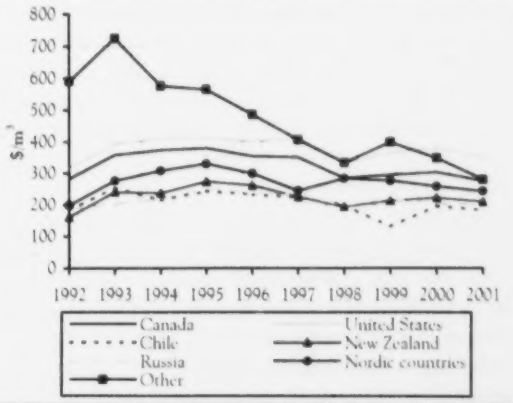
Japanese imports of sawn softwood by source and volume, 1992-2001



Source: Japan Tariff Association, 2002.

GRAPH 7.6.2

Japanese imports of sawn softwood, by source and unit value, 1992-2001



Source: Japan Tariff Association, 2002.

[6] The average life expectancy of a single family house in Japan has been less than 30 years, creating little demand for repair and renovations.

7.6 Summary

Given the rather significant market slowdown in Europe for sawn softwood in 2001, the UNECE Timber Committee estimates for 2002 were, not surprisingly, conservative. It should be noted that the Committee's forecasts, on the basis of official data supplied by Governments, were made in October 2001, in a period of great economic uncertainty following the 11 September 2001 terrorist attacks on the United States. Modest growth in production, imports and exports are anticipated in 2002 across all European regions. Nordic countries exports outside of the EU/EFTA countries may be dynamic in the coming year due to recent strengthening of European and Japanese currencies relative to the United States and Canada.

While it was suggested in last year's *Review* that the Softwood Lumber Agreement between Canada and the United States would, in all likelihood, negatively impact sawn softwood production and trade flows, such was not the case; 2001 Canadian trade to the United States was actually slightly higher than in 2000! It will be interesting to see what happens in 2002 with the new combined countervailing and anti-dumping duties. Regardless of outcome of the new trade dispute, the trend toward increased Canadian exports of further processed, duty-exempt products will likely continue, lowering their reliance on commodity sawn softwood trade. The Timber Committee estimates a slight increase in apparent consumption of sawn softwood for North America, fed by imports as opposed to production. It is likely that these increased imports will be met by non-Canadian sources of supply.

The Committee has estimated that the Russian Federation, and to a lesser degree "Other Europe", will continue to see sawn softwood production outstrip demand for 2002. This, coupled with the supply growth that continues at a rapid clip for plantation grown radiata pine in South America and Oceania, may lead to a global oversupply situation for sawn softwood in the near future.

Finally, in the short term at least, Japan remains the only other significant source of demand for sawn softwood outside of the UNECE regions. While overall levels of demand are not expected to be dramatically altered in 2002, sources of supply will continue to be dynamic. In the medium to longer term, optimism for demand growth remains for emerging south east Asian economies such as Taiwan Province of China, Korea, China and even India.

7.7 References

Anonymous. 2001. World Watch. *Random Lengths International*. August 22, 2001. page 6.

Anonymous. 2001. Russie. *Commerce Internationale du bois*. October 2001. page 22.

Anonymous. 2001. Exports Fail to Reach Potential. *TTJ*. 10 November 2001. page 15.

Anonymous. 2001. The Only Way is Up. *TTJ*. 1/8 December 2001. pages 10-11.

Anonymous. 2001. EURO Vision. *TTJ*. 12/22 December 2001. pages 9-10.

Anonymous. 2002. Global Lumber Outlook, 2002. *Wood Markets Monthly* (R. Taylor, Editor). December 2001 / January 2002. pages 4-5.

Anonymous. 2002. Baltic Economies Draw More Investment. *TTJ*. 16 February 2002. pages 8-9.

Anonymous. 2002. Europe Proposes to Ban CCA Wood Treatment. *Random Lengths International*. February 2002. page 1-2.

Anonymous. 2002. Sawmilling Interests at the Heart of Europe. *TTJ*. 23 February 2002. pages 20-21.

Anonymous. 2002. Severe Shortages Expected. *TTJ*. 16 March 2002. pages 10-11.

Anonymous. 2002. Russian Grows but Still Needs Better Technology. *TTJ*. February 2002.

Anonymous. 2002. U.S. Lumber Market Supply: Dynamic Changes after the CV and AD Duties. *Wood Markets Monthly* (R. Taylor, Editor). June / July 2002. pages 2-3.

Gaston, C. and R. Kozak. 2001. Sawn Softwood – Consumption, Production and Trade. *Forest Products Annual Market Review, 2000 - 2001*. United Nations Economic Commission for Europe / Food and Agricultural Organization, Timber Bulletin – Volume LIV (2001), No. 3. pages 57-72.

Environmental Protection Agency. 2002. <http:/www.epa.gov/>.

FAOSTAT Database. 2002. <http://apps.fao.org/page/collections?subset=forestry>.

UNECE & FAO TIMBER database. 2002. http://www.unece.org/trade/timber/mis/fp-stats.htm

FAO *Yearbook – Forest Products*. 2000.

Japan Tariff Association Database. 2002.

Jeffree, M. 2001. *Nordic Supplement*. TTJ. 15/22 December 2001. pages 20-32.

Resource Information Systems, Inc. 2002. *North American Lumber Forecast*. April 2002 / Volume 2 / Number 2.

Sax, R. 2002. *Woodworking International.* <http://www/harnisch.com/win/editorial.htm>.

Statistics Canada Database. 2002.

Taylor, R. 2002. *Wood Markets 2002 Edition: The Solid Wood Products Outlook, 2002 to 2006.* R.E. Taylor and Associates, International Wood Markets Research Inc., 595 pages.

United States Bureau of the Census Database (United States Department of Commerce). 2002.

Westin, M. 2002. 2002 Messages from Major Suppliers of Wood. *Japan Lumber Journal.* January 31, 2002. page 8.

Chapter 8
After steady growth, sawn hardwood markets declined in 2001

Sawn hardwood market developments, 2001-2002[1]

Highlights

- After rising to above 50 million m^3 in 2000, total sawn hardwood production in the UNECE region declined, led by the sharp drop by the United States.
- In 2001 sawmill production increased significantly in central and eastern European countries, while it remained constant in western Europe.
- Some of the drop in western European sawn hardwood production can be attributed to the resolution of the 1999 windstorms oversupply.
- Exports for the UNECE region were down by 5% in 2001 compared to 2000, largely accounted for by the United States (down 9%) and the European Union (down 13%).
- UNECE region imports of sawn hardwood in 2001 were down by 6%.
- Apparent consumption in the UNECE region fell from its 2000 peak of nearly 53 million m^3 due to a weakened United States market.
- Central and eastern European countries consumption of sawn hardwood is increasing for furniture manufacturing and re-export to the European Union, as evidenced by Poland's furniture exports rising to 7% of total national exports.
- The catastrophic events of 11 September 2001 served merely to accentuate reduced demand in UNECE markets that were already fragile.
- The rapid development of Asian furniture industries continues to have far reaching effects on the hardwood trade in the United States where furniture production has suffered increasingly, and on European producers that have partially lost Asian markets to which they were becoming accustomed.
- Markets continue to be affected by concerns over rates of currency exchange.
- Environmental issues, mainly surrounding certification, have received increased press attention and all hardwoods may well become increasingly embroiled in the issue of legality, whether tropical or temperate.

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Secretariat introduction

This chapter on sawn hardwood markets focuses on temperate hardwood developments. A separate chapter, 13, is on tropical timber markets.

The secretariat would like to thank Mr. Michael Buckley for once again authoring this analysis of the sawn hardwood markets. Formerly European Director of the American Hardwood Export Council (AHEC), Mr. Buckley is well placed to perform such an analysis in that he has considerable experience throughout Europe and the United States. As a hardwood industry consultant, Mr. Buckley's first-hand knowledge about hardwood markets outside of the UNECE region is valuable. We are extremely grateful to Mr. David Venables, European Director of AHEC for facilitating this chapter. Production of this chapter extends our collaboration with AHEC yet one more step.

8.1 Introduction

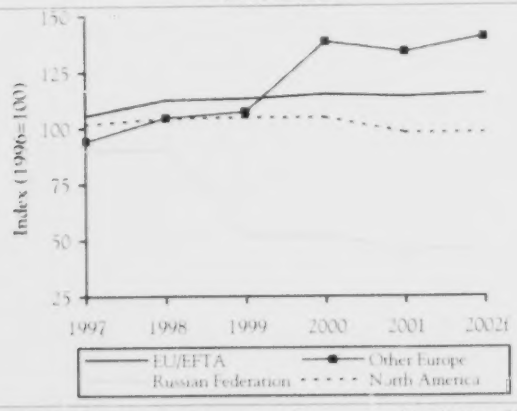
The condition of the hardwood global market in the year of 2001 was already fragile in terms of demand before the events of 11 September 2001 that precipitated a sharp reduction in confidence and trading in both Europe and the United States. The data for 2001 have confirmed the prediction of last year's *Review* that 2000 was a vintage year. In fact 1999 was a more notable year for production, but 2000 was a peak year for trade. However in September 2001, the trade journal *hardwoodmarkets.com*, covering global hardwood industries and markets, headlined "Good start for the European Union trade" but went on to state that it was "likely that there was a more significant slow down in the second quarter of the year as concerns over the global economy mounted". It was quite clear from anecdotal evidence and from trade press reports that the second half of 2001 was a downturn in consumption of all wood products. Furthermore, European exporters of beech were suffering from a sudden reduction of demand in China where many importers were losing interest in a species that they were finding less and less profitable. Beech was replaced by a wide range of imported sawn hardwood from many countries including some Russian hardwood in log form.

The year 2001 has reversed trends, notably in imports and exports and particularly in levels of production. It has also seen a more unstable market with many users unwilling to continue to accept the levels of prices that had been achieved earlier. Buyers were consistently cautious, operating increasingly "Just in Time" and keeping stock levels to a minimum wherever possible. Currency markets were also nervous at the sustained high level of the U.S. dollar against European currencies, which drew loud complaints from many United States exporters, filled with consternation at the imminent introduction of the euro coinage on 1 January 2002. However, there was little disruption to trade in January 2002. The main effect may have been the wider acceptance of the euro for trade within Europe, disadvantaging the United States hardwood trade *vis-à-vis* European grown hardwoods.

Apparent consumption of sawn hardwood – production plus imports minus exports – peaked in the UNECE region in 2000 (graph 8.1.1 and table 8.1.1). Total hardwood consumption includes logs sawn in the region, both temperate and tropical, as well as imports. Consumption of sawnwood does not include value-added hardwood products, e.g., dimension (semi-machined sawnwood). Within the region, apparent consumption is down from 51.52 million m^3 in 1998 to 50.77 million m^3 in 2001. The largest and most significant fall (6.6%) has been in the massive United States domestic market, followed by a huge reduction (7.8%) in Italy which has the second highest apparent consumption in the European Union, after France and ahead of Spain (tables 8.3.1 and 8.5.1). Germany is well behind those three, and also fell (6.5%). A major factor is the increase of imports of value-added products, notably furniture, but also doors, windows and mouldings into the North American and European markets. When this occurs, although the final consumer is in North America or Europe, the sawn hardwood is "consumed" in a country which manufactures the value-added product.

GRAPH 8.1.1

Consumption of sawn hardwood in the UNECE region, 1997-2002



Note: f = The Timber Committee's forecast trend for 2001 to 2002, made at the October 2001 session, was applied to the 2001 figure.
Source: UNECE/FAO TIMBER database, 2002.

TABLE 8.1.1

Sawn hardwood balance in the UNECE region, 1997-2001

(Million m³)

	1997	1998	1999	2000	2001	Timber Committee estimate for 2002 [1]
EU/EFTA						
Production	7.41	7.50	7.86	7.78	7.78	7.85
Imports	6.92	7.74	8.14	8.41	7.95	8.03
Exports	1.73	1.82	2.52	2.49	2.16	2.16
Net trade	-5.19	-5.92	-5.62	-5.92	-5.78	-5.87
Apparent consumption	12.60	13.42	13.49	13.70	13.57	13.72
OTHER EUROPE						
Production	5.17	5.84	6.45	7.87	7.73	8.09
Imports	0.41	0.50	0.78	0.92	0.90	0.91
Exports	1.96	2.47	2.92	3.25	2.95	3.04
Net trade	1.54	1.97	2.14	2.33	2.05	2.13
Apparent consumption	3.62	3.87	4.31	5.54	5.68	5.95
RUSSIAN FEDERATION						
Production	3.93	3.97	2.47	2.54	2.50	2.62
Imports	0.05	0.03	0.01	0.02	0.01	0.01
Exports	0.25	0.25	0.30	0.39	0.63	0.68
Net trade	0.20	0.22	0.30	0.37	0.63	0.67
Apparent consumption	3.73	3.75	2.17	2.17	1.87	1.95
NORTH AMERICA						
Production	30.68	31.07	31.32	31.02	29.01	29.11
Imports	2.12	2.25	2.58	2.86	2.46	2.46
Exports	3.89	3.68	4.13	4.39	3.89	4.01
Net trade	1.77	1.43	1.55	1.53	1.43	1.55
Apparent consumption	28.91	29.64	29.77	29.48	27.58	27.57
UNECE TOTAL						
Production	47.88	49.21	48.99	51.28	49.07	49.68
Imports	9.59	10.60	11.61	12.40	11.53	11.62
Exports	7.91	8.30	10.33	10.74	9.83	10.08
Net trade	-1.68	-2.30	-1.29	-1.66	-1.70	-1.54
Apparent consumption	49.56	51.52	50.28	52.94	50.77	51.22

[1] The Timber Committee's forecast trend for 2000 to 2001, made at the October 2000 session, was applied to the 2000 figure.

Source: UNECE/FAO TIMBER database, 2002.

During 2001 some market sectors performed poorly, particularly the construction industry, which negatively affected sawn hardwood demand. In furniture there continued to be capacity rationalisation as production in Europe moved eastwards and Asian producers continued to take market share from European (and American) producers of low-cost furniture. However the hardwood flooring market remained firm in terms of demand although there was a slight drop (1.2%) in production of the "traditional" area – mainly in the European Union. The European Federation of the Parquet Industry (FEP) has now admitted producers from three eastern European countries and the resulting combined production amounted to 75.6 million m^2 of parquet. Finally there was an un-paralleled increase in demand for oak barrel staves, a high value product, just at a time when material had become less available, due to the reduction in new cuttings of high quality oak in France following the forest damage earlier by the great storm of 1999.

8.2 UNECE region

Production of sawn hardwood in the UNECE region as a whole dropped below 50 million m^3 in 2001 for the first time in four years, of which the year 2000 was the peak (table 8.2.1). The major influence on this figure comes from the United States, where production has fallen significantly, by almost 2 million m^3 in 2001, equivalent to 6.5% (it should be noted that the United

TABLE 8.2.1

Production of sawn hardwood in the UNECE region, 1998-2001

(1,000 m^3)

	1998	1999	2000	2001	Change 2000 to 2001	
					Volume	%
EU/EFTA	7 496	7 863	7 782	7 783	1	0.0
of which:						
France	3 023	2 979	2 968	3 030	62	2.1
Germany	1 165	1 559	1 320	1 287	-33	-2.5
Italy	900	900	900	900	0	0.0
Spain	741	741	872	872	0	0.0
Portugal	370	350	407	423	16	3.9
OTHER EUROPE	5 836	6 455	7 868	7 730	-139	-1.8
of which:						
Turkey	1 889	2 020	2 710	2 645	-65	-2.4
Romania	744	973	1 319	1 254	-65	-4.9
Poland	782	788	730	700	-30	-4.1
Latvia	400	593	580	645	65	11.2
Croatia	522	519	519	519	0	0.0
CIS	4 813	3 349	4 619	4 550	-69	-1.5
of which:						
Russian Federation	3 970	2 465	2 540	2 500	-40	-1.6
NORTH AMERICA	31 070	31 323	31 015	29 008	-2 007	-6.5
Canada	1 027	1 051	1 083	1 023	-60	-5.6
United States	30 043	30 272	29 932	27 985	-1 947	-6.5

Source: UNECE/FAO TIMBER database, 2002.

States revised the million m^3 production for 2000 down to 29.9 million m^3 for that same year).

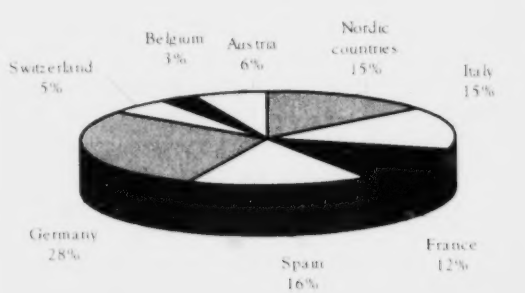
Imports and exports were both down in the region and markets became very nervous at the end of the year. As a result apparent consumption was also down. Trade in sawn hardwood has been unsettled by concerns about exchange rates and particularly the high value of the dollar. Increasingly western European buyers have turned towards eastern Europe for sawn hardwoods, to which the response has been improvements in specifications and quality. However the reliability of these supplies is not proven and in some cases has given rise to criticism from manufacturers who have to make provision for increased stock and increased funds for reduced cash flow. Trade of sawn hardwood in the UNECE region is mainly within subregions, with growing volumes flowing from "Other Europe" to EU/EFTA (table 8.2.2).

In the flooring market[2] there is a discernible trend taking place as German consumption reduces in line with its consumption of all hardwood products, having dropped from a 31% share of the European Union flooring in 2000 to 28% in 2001 (graph 8.2.1). Meanwhile southern Europe is catching up fast with Spain moving up to number two flooring market (16%) and increases in France and Italy. These four countries account for 71% of hardwood flooring consumption in the European Union.

[2] The majority of the wood flooring market is hardwood.

GRAPH 8.2.1

European Union consumption of flooring, 2001



Note: Nordic countries include Denmark, Finland, Norway and Sweden.
Source: European Federation of the Parquet Industry, 2002.

TABLE 8.2.2

Major sawn hardwood trade flows in the UNECE region 1997-2000

(% of global trade)

		From:																	
		EU/EFTA					Other Europe			CIS		North America			Non-UNECE				Grand total
	To:	FRA	DEU	ITA	BEL	Total	HRV	HUN	Total	RUS	Total	USA	CAN	Total	MYS	BRA	IDN	Total	
EU/EFTA	Italy	0.3	0.2			**1.0**	**1.6**	**1.0**	**4.9**	0.3	0.4	**1.0**	0.1	**1.2**	0.2	0.1	0.1	**2.3**	**9.8**
	Germany	0.5		0.3	0.1	**1.5**		0.1	**2.1**	0.1	0.5	0.6	0.2	0.8	0.3			0.8	**5.6**
	Netherlands	0.3	0.4		0.5	**1.8**			0.4			0.2	0.1	0.2	**1.4**	0.4	0.1	**2.4**	**4.9**
	Spain	0.6	0.5	0.1		**1.4**			0.2		0.1	0.9	0.1	1.0		0.4		**2.1**	**4.7**
	United Kingdom	0.2	0.2	0.1		1.0			0.9			0.7	0.2	0.9	0.4	0.1		0.9	**3.8**
	France		0.1	0.2	0.2	0.7			0.3			0.2	0.1	0.3	0.2	0.8		**2.1**	**3.5**
	Belgium	0.3	0.1			0.5			0.3			0.2		0.2	0.2	0.1		0.5	**1.5**
	Austria		0.1	0.1		0.3	0.2	0.2	**1.1**										**1.4**
	Portugal	0.1				0.4						0.2		0.2		0.3		0.6	**1.2**
	Total	**3.1**	**2.0**	0.9	1.0	**10.5**	**2.0**	**1.6**	**11.7**	0.6	**1.3**	**4.6**	**1.2**	**5.8**	**2.8**	**2.3**	0.3	**12.7**	**42.0**
Other Europe	Slovenia					0.1	0.3		0.5										0.6
	Total		0.2	0.1		0.6	0.3		**1.9**	0.2	0.5	0.1		0.1				0.2	**3.4**
CIS	Russian Federation																		0.2
	Total					0.1			0.1	0.6	0.7								0.9
North America	United States			0.2		0.3							**5.3**	**5.3**	0.4	0.7	0.2	**2.4**	**8.1**
	Canada											**6.6**		**6.6**	0.1			0.2	**6.8**
	Total			0.2		0.4						**6.6**	**5.3**	**11.9**	0.5	0.8	0.2	**2.6**	**14.9**
Non-UNECE	Japan			0.1		0.2						0.9	0.1	1.0	**2.3**	0.1	0.4	**4.3**	**5.5**
	Thailand											0.2		0.2	**2.6**	0.2		**4.1**	**4.3**
	Hong Kong	0.2	0.3	0.2		0.8						0.7	0.1	0.8	1.0	0.1	0.2	**2.3**	**3.9**
	China	0.1	0.3	0.1		0.5			0.2	0.1	0.1	0.4		0.4	0.6	0.1	0.3	**2.3**	**3.5**
	Taiwan P.o.C					0.1						0.6	0.1	0.7	**1.3**	0.1	0.3	**2.1**	**2.9**
	Total	0.6	0.7	0.5		**3.1**	0.2		**2.5**	0.3	0.3	**6.0**	0.4	**6.4**	**13.5**	**1.7**	**1.7**	**26.5**	**38.8**
Grand total		**3.8**	**3.0**	**1.8**	1.0	**14.7**	**2.4**	**1.6**	**16.3**	**1.7**	**2.8**	**17.3**	**7.0**	**24.2**	**16.8**	**4.8**	**2.2**	**42.0**	**100.0**

Note: AUT = Austria, BEL = Belgium, BRA = Brazil, CAN = Canada, CHE = Switzerland, CHL = Chile, CHN = China, CZE = Czech Republic, DEU = Germany, ESP = Spain, EST = Estonia, FIN = Finland, FRA = France, GAB = Gabon, GBR = United Kingdom, HRV = Croatia, HUN = Hungary, IDN = Indonesia, ITA = Italia, JAP = Japan, KOR = Republic of Korea, LVA = Latvia, MAL = Malaysia, MEX = Mexico, MYS = Malaysia, NLD = Netherlands, NOR = Norway, NZL = New Zealand, PNG = Papua New Guinea, POL = Poland, P.o.C = Province of China, PRT = Portugal, RUS = Russian Federation, SVK = Slovakia, SWE = Sweden, THA = Thailand, USA = United States, ZAF = South Africa.

Source: UN COMTRADE/EFI, 2002.

8.3 EU/EFTA subregion

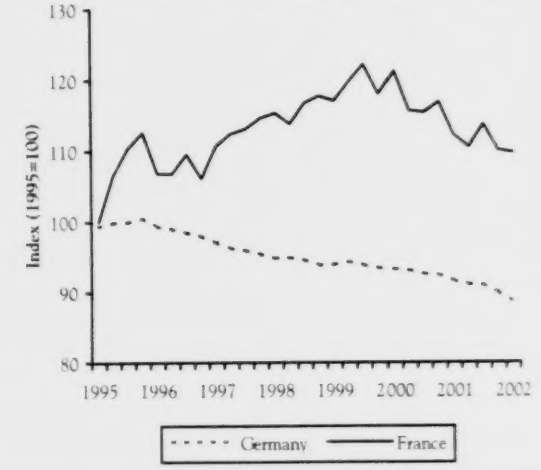
The European Union and the EFTA region increased sawn hardwood production only marginally although there was a significant increase in France (2.1%). The reason behind the increase in France is due to a gain in real demand due to successful promotion of oak, and a subsequent revival in consumption as well as some residual production of sawnwood from logs felled by the December 1999 windstorms. Conversely, there was a reduction in Germany (-2.5%) following a loss of exports for German beech and completion of converting storm-felled logs. Sawnwood prices were falling in 2001 and early 2002 in Germany, and France (graph 8.3.1). Over the last four years there has been a very gradual increase in the EU/EFTA subregion in sawn hardwood production from 7.5 m^3 in 1998 to 7.8 million m^3 in 2001, representing a cumulative increase of 7.2% for the period. The EU/EFTA accounted for just over 16% of the sawn hardwood production in the UNECE area of the world and is therefore still dwarfed by the North American continent which accounted for 59% in 2001.

Exports from EU/EFTA countries suffered a fall of 13.2% in 2001 compared to the previous year and this compared to a drop of only 4.5% for the region as a whole (tables 8.3.1 and 8.3.2). Very significant reductions in exports were seen in France (-11.5%), Germany (-9.9%), Belgium (-20.4%) and Austria (-22.8%) caused largely by loss of Asian markets for beech and in part from processing the storm-generated wood before insect and fungal attack. The Chinese had overbought beech sawnwood and were unable to make profit on it. And there were mistakes with grades and qualities. Furthermore there is a trend towards sawing beech logs in China.

Imports of sawn hardwood, approximately one-third tropical, had been steadily rising from 1998 to 2000 (by 10.4% over three years) but fell back by 5.5 % in 2001 to 8.0 million m^3. This reflected a more fragile economy in 2001 than the previous year and also perhaps a greater use of European resources. The two major countries where imports fell were Italy, suffering from poor furniture export demand – especially in Germany, and Germany itself. Consumption of hardwood products there, particularly furniture, has adversely affected producers in Austria, Denmark and especially Italy. Nor do prospects for 2002 look good. Sales of furniture in the first quarter in Germany were down by 11% on the previous year and 15% down in March on the previous March, according to the Verband der Deutschen Mobelindustrie (VDM). In 2001 building investments in Germany were down by 5.8% according to the Zentralverband des Deutschen Baugewerbes (ZDB), although the drop in building permits were slightly lower in 2001 than in 2000. By contrast, the United Kingdom, where the economy was still healthy, increased imports by 6.2% during 2001. Overall the European data is still subject to adjustment but the trend indicated is in line with expectation.

GRAPH 8.3.1

French and German beech sawnwood prices, 1995-2002



Sources: Statistisches Bundesamt and Centre d'Etudes de l'Economie du Bois, 2002.

TABLE 8.3.1

Exports and imports of sawn hardwood in the UNECE region, by volume, 1998-2001

(1,000 m³)

	1998	1999	2000	2001	Change 2000 to 2001	
					Volume	%
EXPORTS						
EU/EFTA	1 822	2 519	2 491	2 163	-328	-13.2
of which:						
France	552	719	661	585	-76	-11.5
Germany	446	494	616	555	-61	-9.9
Belgium	...	397	347	276	-71	-20.4
Austria	110	243	261	202	-59	-22.8
Italy	125	161	167	147	-20	-12.0
Netherlands	137	145	114	114	0	0.3
OTHER EUROPE	2 466	2 921	3 250	2 946	-304	-9.4
of which:						
Romania	333	423	646	498	-148	-22.9
Latvia	316	372	442	494	51	11.6
Poland	297	308	315	234	-81	-25.7
Lithuania	170	202	204	229	25	12.2
CIS	328	757	603	829	226	37.5
of which:						
Russian Federation	249	303	391	631	240	61.4
NORTH AMERICA	3 680	4 129	4 395	3 892	-503	-11.4
Canada	1 178	1 339	1 445	1 257	-188	-13.0
United States	2 502	2 790	2 950	2 635	-315	-10.7
IMPORTS						
EU/EFTA	7 743	8 142	8 407	7 947	-460	-5.5
of which:						
Italy	2 021	2 054	2 076	1 837	-239	-11.5
Spain	1 259	1 201	1 323	1 323	0	0.0
Netherlands	605	687	748	748	0	0.0
United Kingdom	479	504	655	696	41	6.2
Germany	775	809	822	695	-127	-15.5
France	600	720	659	659	0	0.0
OTHER EUROPE	497	778	922	899	-23	-2.5
of which:						
Poland	94	133	160	206	46	28.8
Slovenia	90	120	143	122	-22	-15.0
Israel	23	102	121	121	0	0.0
Czech Republic	89	91	117	110	-7	-6.0
Turkey	78	100	77	38	-39	-50.6
CIS	112	113	204	220	16	7.9
of which:						
Russian Federation	26	7	17	5	-12	-70.6
NORTH AMERICA	2 249	2 580	2 864	2 462	-402	-14.0
Canada	954	1 084	1 182	1 038	-144	-12.2
United States	1 295	1 496	1 682	1 424	-258	-15.3

Source: UNECE/FAO TIMBER database, 2002.

TABLE 8.3.2

Exports and imports of sawn hardwood in the UNECE region, by value, 1998-2001

($1,000)

	1998	1999	2000	2001	Change 2000 to 2001	
					Volume	%
EXPORTS						
EU/EFTA	1 063 818	1 055 789	1 078 630	920 303	-158 326	-14.7
of which:						
Germany	199 332	227 936	297 513	248 454	-49 059	-16.5
France	212 195	208 973	208 188	182 747	-25 440	-12.2
Belgium	...	172 222	193 954	144 662	-49 292	-25.4
Italy	231 306	156 225	124 209	95 112	-29 097	-23.4
Netherlands	100 232	98 993	74 870	72 602	-2 268	-3.0
Austria	46 427	69 017	60 957	63 093	2 136	3.5
OTHER EUROPE	430 492	517 505	609 612	569 087	-40 525	-6.6
of which:						
Romania	95 862	129 095	169 708	164 401	-5 307	-3.1
Poland	79 600	81 100	81 100	64 100	-17 000	-21.0
Latvia	40 173	45 622	48 351	51 897	3 546	7.3
Slovakia	43 915	46 551	46 839	47 542	703	1.5
Lithuania	23 643	30 173	27 941	34 683	6 743	24.1
CIS	18 474	51 333	36 199	63 629	27 431	75.8
of which:						
Russian Federation	17 537	22 100	27 900	57 372	29 472	105.6
NORTH AMERICA	1 628 980	1 792 855	1 879 850	1 620 962	-258 889	-13.8
Canada	407 405	426 443	451 716	395 403	-56 314	-12.5
United States	1 221 575	1 366 412	1 428 134	1 225 559	-202 575	-14.2
IMPORTS						
EU/EFTA	3 243 888	3 251 309	3 285 270	2 982 228	-303 041	-9.2
of which:						
Italy	738 000	760 599	701 516	615 353	-86 163	-12.3
Spain	408 145	374 736	385 758	374 073	-11 685	-3.0
Netherlands	317 961	347 479	359 839	348 939	-10 900	-3.0
United Kingdom	280 669	282 695	319 813	311 958	-7 856	-2.5
France	313 098	269 864	306 311	293 003	-13 308	-4.3
Belgium	...	267 241	305 336	249 182	-56 154	-18.4
OTHER EUROPE	148 645	182 520	211 786	206 852	-4 934	-2.3
of which:						
Israel	11 000	47 539	55 941	55 941	0	0.0
Poland	25 700	30 200	38 700	43 300	4 600	11.9
Slovenia	27 221	33 828	36 669	29 553	-7 116	-19.4
Czech Republic	31 341	27 163	27 463	23 820	-3 642	-13.3
Cyprus	6 436	...	7 868	7 715	-153	-1.9
CIS	18 877	3 874	8 463	8 819	356	4.2
of which:						
Russian Federation	8 664	2 332	2 890	1 835	-1 055	-36.5
NORTH AMERICA	703 989	793 548	894 797	806 249	-88 548	-9.9
Canada	305 358	352 248	401 755	344 408	-57 347	-14.3
United States	398 631	441 300	493 042	461 841	-31 201	-6.3

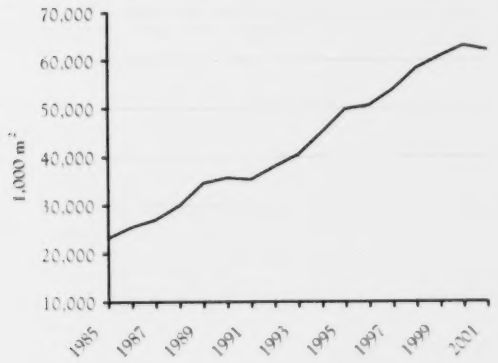
Source: UNECE/FAO TIMBER database, 2002.

Apparent consumption in the EU/EFTA region is down by only 1.0% in 2001 compared to 2000 (table 8.3.3). There were notable improvements in:

- Belgium, on the partial recovery of furniture production and a strong flooring market;
- France, where the consumption of oak is recovering and the barrel stave market is very strong; and
- United Kingdom, which enjoyed the best apparent consumption on a four-year rising trend due to its healthy economy.
- There were notable reductions in:
- Germany, on continued weakness in construction projects and furniture demand;
- Norway, on loss of some export markets in the European Union; and
- Italy, on weak demand from Germany and some other furniture markets.

GRAPH 8.3.2

Flooring production in the European Union, 1985-2001



Source: European Federation of the Parquet Industry, 2002.

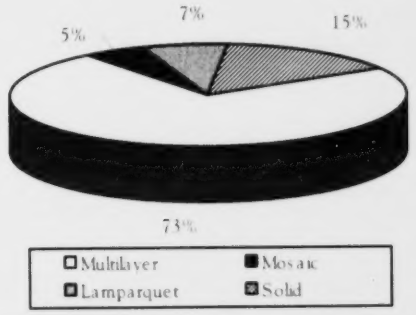
Markets were already nervous in 2001 before the terrorist attacks of September. Demand levels were already showing some signs of weakness as the economies of Europe were beginning to slow and the hoped-for improvement in furniture consumption did not materialise. This was particularly true for Germany and all producing countries dependent on exports to Germany. The strength of the dollar was already negatively affecting export markets for American hardwood suppliers, but combined with reductions in the domestic demand in the United States, mill cutbacks resulting in producing even less higher grade material available for export.

In the hardwood flooring market, which has grown consistently in Europe, consumption was down (-1.3%) within the European Union in 2001 for the first time in many years, (graph 8.3.2) but demand was particularly strong in France (13%) and Spain (16%), both catching up with the trend of the fashion for hardwood floor-coverings in the rest of northern Europe.

Solid hardwood flooring accounted for 15.2% but was up (4%) on 2000, whereas multilayer fell, and solid "lamparquet" by 23% to 4.6% market share, giving solid flooring products one-fifth share (graph 8.3.3). Lamparquet is solid but in small pieces, which are not glued together - as in mosaic. Thus mosaic, lamparquet and solid all qualify as different forms of solid wood, accounting for 27% of the production shown.

GRAPH 8.3.3

Flooring types in the European Union, 2001



Source: European Federation of the Parquet Industry, 2002.

One ongoing phenomenon in Europe is the increase in the use of oak barrels for wine, which is the subject of endless discussion and argument concerning type. Increasingly, it appears, wine drinkers prefer the taste of oak. French oak came under pressure after the great storms of 1999 after which harvests were reduced.

American white oak, being much cheaper and even preferred by some producers, is increasingly imported as blank stave material to be manufactured in Europe because the import of finished barrels is banned for phyto-sanitary reasons. Meanwhile there are also known to be oak barrel aging trials going on, even in France, using oak from Croatia and Ukraine among other European origins. Much of this oak is simply described as "European oak". At least one French barrel manufacturer has established production in the

United States and eastern Europe to take advantage of the local wood resource to meet regional demand for barrels.

Another sector that has shown very healthy growth within the region, consuming significant volumes of sawn hardwood and veneer, is the door manufacturing industry in Spain. There are now several huge state-of-the-art producers with individual capacities of high quality products up to 2 million doors per year. This industry has invested heavily in the last few years and the fact of Spain's dependence on imports for hardwood has become irrelevant to its success.

8.4 Other Europe

Elsewhere in Europe, other countries, led by Turkey and Romania, accounted for 15% of the UNECE region's hardwood production – not far behind the European Union production. Overall production was down 1.8% on the previous year, but the long-term trend is significantly upward, by 28% over the four-year period from 1998 to 2001. Turkey supposedly produced 35% of the "Other Europe" sawn hardwood production, much of which is believed to be beech, however it is possible that the total figure of 2.6 million m^3 is overstated, being mixed with some softwood species. If the figure is correct, Romania – an important producer – only achieved 17.5% of the production of this subregion producing 1.3 million m^3. Furthermore, Romania's production has expanded by 67% in the same four years. The three other main countries in this area are: Poland, which is experiencing a gradual fall in production; Croatia, where statistics were unavailable; and Latvia, where the increased use of birch by IKEA and other uses has pushed production up by 61%.

By contrast to the EU/EFTA subregion, exports from "Other Europe" were up in 2001 by 2%, now accounting for one third of the UNECE region's total exports. Even this position may be understated for the data from Croatia, again an important exporter, was not available in time for this Review.

"Other Europe" imports of hardwood are extremely varied. Anecdotal evidence, for example, indicates French beech and oak being shipped to Romania for processing and re-export. There is also a growing trade in species that are not native, such as black walnut and black cherry, to satisfy overseas furniture markets demanding certain product ranges, natural colours and designs. There is also a huge trade in hardwood material simply shipped by the European Union investors – mainly German – into eastern European

TABLE 8.3.3

EU/EFTA sawn hardwood apparent consumption, 1998-2001

(1,000 m^3)

	1998	1999	2000	2001	Change 2000 to 2001	
					Volume	%
EU/EFTA	13 417	13 486	13 699	13 568	-131	-1.0
Austria	292	322	335	332	-3	-0.9
Belgium	...	481	508	528	20	3.9
Denmark	259	161	153	209	56	36.6
Finland	106	105	153	153	0	0.1
France	3 072	2 980	2 966	3 104	138	4.7
Germany	1 494	1 874	1 526	1 427	-99	-6.5
Greece	72	148	112	112	0	0.0
Ireland	159	141	151	155	4	2.3
Italy	2 796	2 793	2 809	2 590	-219	-7.8
Luxembourg	...	29	40	40	0	0.0
Netherlands	621	701	777	777	-1	-0.1
Norway	52	56	53	87	34	64.2
Portugal	544	559	647	606	-42	-6.4
Spain	1 968	1 902	2 155	2 155	0	0.0
Sweden	352	368	340	340	0	0.0
Switzerland	253	250	227	176	-51	-22.5
United Kingdom	596	613	747	778	31	4.1

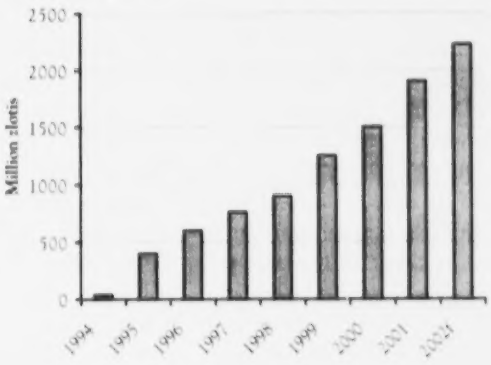
Source: UNECE/FAO TIMBER database, 2002.

plants for furniture and other products for re-export. The most significant example of this is Poland accounting for 21% of the regions' imports. Five other countries led by Hungary (plus Slovenia, Israel, Czech Republic, and Slovakia) account for another 50% of the total. Given that re-export prospects for finished products, such as furniture, play an important role in the trade in sawn hardwood, there is an interesting comparison within this region when considering Poland and Hungary. In contrast to the activity in Poland, traders and manufacturers in Hungary experience rising labour costs and now adverse tariff rates against United States sawn hardwood compared to that from the European Union.

Of all the UNECE subregions, only "Other Europe" had continued growth in apparent consumption in 2001, rising 2.6% over 2000 (table 8.4.1). Turkey, the largest consumer in "Other Europe", dropped 112,000 m^3, a 4.1% decrease. Notable gains in consumption were made in Poland (up 17%), which grows continuously and is now the leading furniture supplier to the European Union. In 2001 Poland exported 70% of all furniture produced, which represented 7% of its total national exports – a vital ingredient in its trade balance as a mainstay of Polish exports.

GRAPH 8.4.1

Polish furniture sales to Ikea, 1994-2002



Note: f = forecast.
Source: *Gazeta Wyborcza*, 2002.

In 2002, Polish deliveries to IKEA are estimated to amount to 2.2 billion zlotis ($538 million) making Poland number two supplier in the world after China (graph 8.4.1).

Apparent consumption of sawn hardwood in Romania has also continued to grow, marking a 13%

TABLE 8.4.1

Other Europe sawn hardwood apparent consumption, 1998-2001

(1,000 m^3)

	1998	1999	2000	2001	Change 2000 to 2001	
					Volume	%
OTHER EUROPE	3 989	4 471	5 533	5 675	142	2.6
Albania	19	20	43	43	0	0.0
Cyprus	19	17	25	16	-9	-34.3
Czech Republic	357	360	364	369	5	1.4
Estonia	21	26	-52	15	66	...
Hungary	-19	68	90	90	0	0.0
Israel	21	102	120	120	0	0.0
Latvia	88	228	146	157	11	7.4
Lithuania	103	116	115	97	-18	-15.8
Poland	578	613	575	671	97	16.9
Romania	413	554	679	765	86	12.6
Slovakia	137	49	206	234	28	13.7
Slovenia	113	128	164	184	20	12.0
The fYR of Macedonia	8	15	19	9	-10	-52.1
Turkey	1 958	2 101	2 759	2 647	-112	-4.1
Yugoslavia	...	...	178	150	-28	-15.6

Source: UNECE/FAO TIMBER database, 2002.

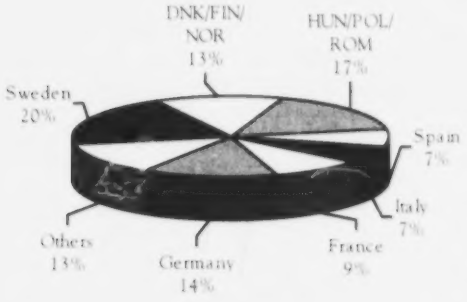
increased consumption on 2000 and 85% over the four years from 1998 – largely due to an influx to Romania of investment and technology together with marketing expertise from foreign investors.

Hungary, Poland and Romania are now included in the FEP as significant producers of flooring, accounting for 17% of production, which is less than the production share (20%) of Sweden – the leading country of the European Union (graph 8.4.2).

This obvious increase in the importance of non-EU/EFTA suppliers of flooring is reflected in other developments in the region, in the form of inward investment in infrastructure and processing capacity. In Romania, for example, the Government offers foreign investors a number of subsidies, particularly those locating in so-called disadvantaged regions.

GRAPH 8.4.2

Flooring production in the European Federation of the Parquet Industry members, 2001



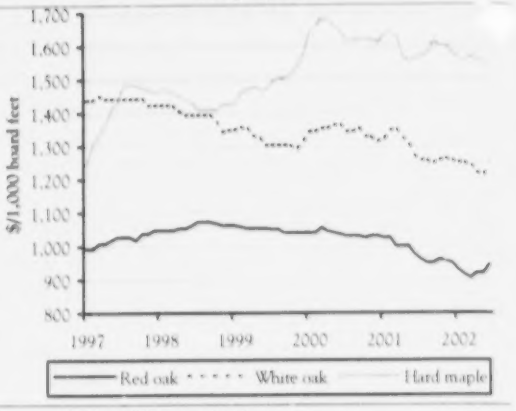
Note: Others include Austria, Belgium, Netherlands and Switzerland. DNK = Denmark, FIN = Finland, NOR = Norway, HUN = Hungary, POL = Poland, ROM = Romania.
Source: European Federation of the Parquet Industry, 2002.

8.5 North America

The United States is by far the largest producer of hardwood sawn hardwood in the UNECE region accounting for 56.9% in 2001 with Canada adding only 2.1% to bring the total in North America to 29.0 m^3. Adjusted data shows that 1999 was the peak production year (table 8.1.1) at 33.8 million m^3 rather than 2000 as suggested by the data presented last year. United States hardwood production is very sensitive to the domestic market for furniture and construction for interiors, but also to profitability of sawmills and the economic conditions of the last two years has resulted in mill closures and shift reductions that have reduced

GRAPH 8.5.1

Sawn hardwood prices in the United States, 1997-2002



Source: *Hardwood Review*, 2002.

the overall production. Sawn hardwood prices were falling in the United States during the last year, with small upturns apparent in early 2002 (graph 8.5.1). The recession in the United States manufacturing sector curtailed demand for pallets, most of which are made from sawn hardwood. Canadian production of sawn hardwood is based on both American grown and Canadian native species and has been remarkably steady in the last four years, although it showed a reduction of 5.6% in 2001.

Exports of American hardwoods, including those grown in the United States and processed in Canada, were down in total by 431,000 m^3 in 2001 – a drop of 10.3% for North America. This was widely believed to be due largely to the strength of the dollar against European currencies throughout the year, rather than the events of 11 September 2001 which disrupted trade too late in the year to make a major impact on the full result. Furthermore there was much competition emerging from eastern Europe producers, who were beginning to offer hardwood to traditional western European buyers of American hardwoods. As a result of all these factors, United States exports were down by 6.3% and from Canada by 14.3%. Latest USDA Foreign Agricultural Service data (WP 1-02, March 2002) shows that in 2001 the European Union 15 countries accounted for 28% of United States global exports of sawn hardwood, down from 29% in 2000.

Import data from North America, used over recent years, includes tropical and temperate sawn hardwood. The import volume for 2001 used in this report includes about 16% or 400,000 m^3 of tropical timber from a wide range of countries. Inclusion of tropical sawnwood is maintained in order to make consistent

TABLE 8.5.1

North American sawn hardwood apparent consumption, 1998-2001

(1,000 m³)

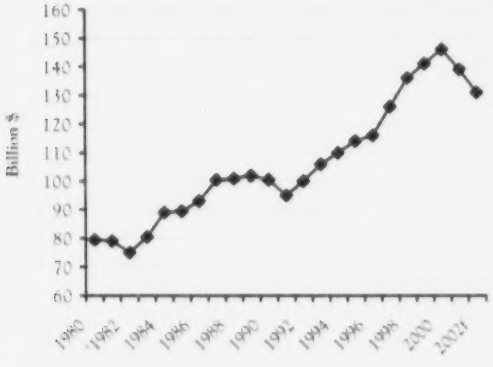
	1998	1999	2000	2001	Change 2000 to 2001	
					Volume	%
NORTH AMERICA	29 638	29 774	29 484	27 578	-1 907	-6.5
Canada	802	796	820	804	-17	-2.0
United States	28 836	28 978	28 664	26 774	-1 890	-6.6

Source: UNECE/FAO TIMBER database, 2002.

historical comparison of apparent consumption over the last four years (there is approximately 33% tropical timber in the European Union data, arising for example from re-exports from say Netherlands to United Kingdom but seen as European timber). Imports of sawn hardwood into the United States and Canada amount to 2.5 million m³ compared to exports of 3.9 million m³ all of which is of North American (temperate) origin.

GRAPH 8.5.2

United States furniture production, 1980-2002



Note: f = forecast.
Source: Federal Reserve Board, 2002.

North American apparent consumption is almost entirely dependent on its domestic market which suffered in 2001 from hugely increased competition for its furniture makers from Asia, especially China and increasingly Viet Nam and other southeast Asian nations (table 8.5.1 and graph 8.5.2). The last couple of years have seen a rapid acceleration in the furniture manufacturing capacity in several different regions within China. Much of this was initiated by Taiwanese producers who have invested in a plant in China, but who now see attractive opportunities in other low labour cost countries such as Vietnam. As a result United States consumption of higher grade sawnwood has seen reduced demand leading to production cut-backs. At the same time less lower grade material was consumed by the packaging market. Canadian consumption appears little changed over the four-year period.

United States furniture production has taken a sharp downturn since the 2000 when the economy started to slow and the full impact of imports from Asian producers was felt. Most commentators believe that this trend will continue for some time and many United States hardwood producers point to it as a major reason for reduced profitability that they currently suffer. The level of residential construction in the United States has however underpinned the market for hardwood to some extent without which the downturn in hardwood consumption might have been far worse.

8.6 CIS subregion

Production of sawn hardwoods in CIS continues to show a falling trend, down by 1.5% in 2001, with the greatest reduction in the Russian Federation, 1.6% lower. However, CIS production remains at 9.2% share of the ECE production which is unchanged from 1998.

Exports of sawn hardwood from CIS reached a recent record high in 2001, rising to 829,000 m³ – up from 603,000 in 2000. Of the total CIS export volume, the Russian Federation accounted for 76%. In value, CIS exports increased by 75.8% over 2000. The CIS is a relatively insignificant import region, accounting for only 1.8% of total imports in 2001, although there is an upward trend, with imports now double the level of four years ago – albeit from a small base. This may indicate strategic imports for products made in CIS and re-exported to countries specifying species or specifications and grades that are unavailable in CIS.

TABLE 8.6.1

CIS sawn hardwood apparent consumption, 1998-2001

(1,000 m³)

	1998	1999	2000	2001	Change 2000 to 2001	
					Volume	%
Belarus	740	365	490	496	6	1.2
Republic of Moldova	58	59	58	58	0	0.0
Russian Federation	3 747	2 169	2 166	1 874	-292	-13.5

Source: UNECE/FAO TIMBER database, 2002.

However the CIS region as a whole is showing a downward trend in apparent consumption due to the steady decline in the Russian Federation (table 8.6.1). Overall production was down, exports were up significantly and with imports only up marginally, consumption appears to be falling in CIS.

8.7 Conclusion

8.7.1 *What next in the sawn hardwood markets?*

The conclusion for 2001 is that sawn hardwood within the UNECE region has reduced in production and apparent consumption, entering into a downward cycle that may have had its origins early in the year. The question now is whether that cycle is terminating in 2002 or not. Certainly lower production and stocks, especially in some dry specification of key species, appears to be setting the bottom of the price cycle with some mid-year indications of prices firming. In the case of German beech, for example, production is reported as having been reduced by 40% in the first five months of 2002.

There remain however three major un-answered questions concerning the true consumption of temperate sawn hardwood in the UNECE region as a whole. First is the authenticity and accuracy of the huge United States hardwood production volumes over the immediate last few years, coupled with the current trend in 2002. Estimates vary considerably, but there is little doubt that production fell heavily in 2001 due to mill closures and shift reductions. Second, is the age-old problem of accounting for dimension and semi-processed sawnwood. Third is knowing the consumption of tropical sawn hardwood included in temperate hardwood data.

Another issue facing the hardwood trade in Europe is a perceived over-capacity of importers all chasing smaller volumes of sales as many users increase the volumes that they purchase direct from producers. This is a long-term trend, but one that the hardwood trade has not been able to address through rationalisation.

8.7.2 *Effective promotion can alter markets*

Despite the depressed state of the hardwood market in some sectors and in certain key countries, the market for sawn hardwood remains relatively buoyant for a few applications. As the American Hardwood Export Council (AHEC) has shown over many years, effective promotion is one measure that the hardwood industry can take to stimulate demand and to ensure that hardwoods take their share of the wood consumption available. In recent years oak has suffered from reduced demand by furniture makers and European producers faced stiff competition from American oak. Subsequent efforts by the French oak industry under L'Association pour la Promotion des Emplois du Chêne Français (l'APECF) have been impressive and are now showing results. At the Carrefour International du Bois, held in May 2002 in Nantes, France, they advanced the promotional initiative that they had started in 2000 with improved

TABLE 8.7.1

Species market share in European flooring, 2001

Species	%
Oak	45.3
Red oak	1.2
Beech	17.7
Chestnut	1.7
Birch	2.3
Maple	7.4
Ash	5.2
Acacia	0.2
Pine	0.7
Eucalyptus	0.6
Cherry	1.9
Tropical	13.9
Other	2.1

Source: European Federation of the Parquet Industry, 2002.

publications and in particular their publication *Partenaire de l'Avenir, le Chêne*.

At the same event AHEC also launched its new grading guide in French which covers both red and white oak. Such initiatives by the global hardwood trade are too rare so these are to be welcomed. Whether they have contributed to the continued taste for oak in flooring may not be proven but the European Federation of the Parquet Industry (FEP) has published wood species data for 2001 which gives oak a 46.4% share. Together oak, beech and maple account for 72% of all species in flooring. FEP report that beech is losing out to oak in the traditional German market, just as many furniture shows in Europe have demonstrated a return in fashion for light-coloured, natural finished, oak.

Temperate hardwood accounts for 75% of flooring manufactured in Europe by FEP members (table 8.7.1). FEP is predicting "substantial growth" for 2002 with no major changes in market share.

Reports from European trade journals also support and promote hardwood sector growth: "*Never has wood been so popular*" (*L'echo des Bois*, Belgium, 2002); "*All the indicators are that European governments increasingly see the timber sector as a vital element in their strategies for sustainable development*" (*TTJ*, United Kingdom, 2002). The ability of hardwood traders to turn this climate of interest to greater consumption may well depend upon the environmental policies that they adopt and implement[3].

8.7.3 *Expanding niche markets*

As a niche market, there seems to be no end to the strengthening demand for oak for barrels across Europe with good prospects for many European and American producers who are able to meet the stringent quality and drying requirements for stave material. European wine makers, particularly in France, under threat from "New World" producers are losing market share and consequently looking desperately at ways to re-introduce the fashion for their wines. This is a long term process part of which now seems to be an increased use of oak for flavours perceived to be in fashion with the masses in the world of supermarket buying in the European Union. Although it should also be noted that wine barrels have a limited life which underpins the need demand through replacements.

8.7.4 *Mixed market signals in first half of 2002*

This year of 2002 is one of mixed signals for hardwood consumption both on the North American continent and across Europe, in which the dynamics of supply and demand are changing and the prospects for the future unclear. Central and eastern European has taken an increasingly significant role as supplier mainly at the expense of United States hardwood suppliers. Commenting on the consumption of hardwood in Europe, the authoritative German publication EUWID reported that "*the European Organisation of Saumills (EOS) expects another shifting of production to the east*".

8.7.5 *Currency fluctuations*

Changes in currency had been unsettling trade, as American hardwoods lost ground to European hardwoods. However, at the time of writing, the euro was fast approaching parity with a weakening dollar, which could revive interest in American hardwood shipments to Europe.

8.7.6 *Certification*

The environmental issues surrounding hardwoods are again the centre of attention and intense debate and activity. The certified forest area has heightened throughout the UNECE region during the last twelve months (see chapter 11 on certified forest products). Existing schemes such as the Sustainable Forestry Initiative (SFI) in the United States and emerging schemes, which are fast making progress, such as the Pan European Forest Certification (PEFC) scheme are not yet achieving universal acceptance. Increasingly, European markets – especially in the north – are looking for sustainable (preferably certified) hardwood sources and these two schemes demonstrate that there may be choices. The pressure on governments and local authorities, through guidelines on public provenance, in European and America, is likely to increase and accordingly their subsequent sensitivity towards the use of all hardwoods, irrespective of source, could be affected. This comes at a time when designers, architects and consumers are taking a renewed interest in hardwood as a fashionable material.

8.8 References

Verband der Deutschen Mobelindustrie (VDM).
Zentralverband des Deutschen Baugewerbes (ZDB).
European Federation of the Parquet Industry (FEP), www.parquet.net
EUWID, www.euwid.de
TTJ www.ttjonline.com
L'echo des Bois www.echodesbois.be
GazetaWyborcza newspaper, Poland, 2002.

[3] Under the auspices of the UNECE Timber Committee a seminar on the "Strategies to stimulate and promote the sound use of forest products as renewable and environmentally friendly raw materials" will be held in Romania in March 2003.

WP 1-02 Report, USDA Foreign Agricultural Service, 2002.
hardwoodmarkets.com, various editions, 2002.

Chapter 9
Wood-based panels supply, trade and consumption[1]

Highlights

- In Europe and North America the wood-based panels industries are restructuring to increase profitability in the sector which has seen rapid capacity expansions, intense competition and prices under pressure.
- Better than the other wood sectors, North American consumption of wood-based panels in 2001 was steady at 63 million m^3 due to continued strength in residential construction.
- European consumption of wood-based panels dropped by 6% in 2001 in the EU/EFTA subregion, down to 43 million m^3 following the 7% increase in 2000, and by 1% in "Other Europe"; both subregions' consumption fell as a consequence of the economic slowdown.
- Russian Federation consumption of wood-based panels climbed 15% in 2001, to reach 4 million m^3, confirming the recovery of the sector.
- Continued substitution by oriented strand board (OSB) resulted in decreased softwood plywood production (and capacity) in 2001 in the United States.
- In Europe, softwood plywood production in EU/EFTA countries was down, due to cutbacks by the major producers, Finland and Germany, but production increased by more than 6% in "Other Europe" and by almost 13% in the Russian Federation.
- OSB production in North America continued upwards in 2001, reaching 20.0 million m^3, however the gain masked considerable difficulties in profitability, as capacity was greater than what the market could bear.
- In Europe production of OSB set a new record level of 1.6 million m^3, 28% higher than in 2000 as new mills came on stream and others reached operational capacity.
- As the European particle board industry restructured in 2001, the EU/EFTA subregion production dropped by 6% to 28 million m^3 and the "Other Europe" subregion by 2.8% to 7.0 million m^3.
- MDF production in 2001 in North America remained close to 2000 levels, at 3.3 million m^3.
- MDF production in the EU/EFTA subregion in 2001 continued its rapid expansion, setting a new record of 7.4 million m^3, commensurate with demand by furniture and laminated flooring.
- MDF production in "Other Europe" subregion expanded in 2001 to 1.5 million m^3. Major increases occurred in Poland and Romania.

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Secretariat introduction

The secretariat would like to thank Mr. Henry Spelter for working together with us on this chapter, as well as helping us on other chapters too. Mr. Spelter is a specialist in forest products markets in the Timber Demand and Technology Assessment Research Work Unit at the Forest Products Laboratory of the USDA Forest Service. This is the second time that he has contributed to this chapter. Such collaboration has proved to be mutually beneficial in the past and continues to be so this year too.

While the basis for this chapter is UNECE/FAO statistics, considerable material in the chapter came from two trade associations, the Composite Panel Association (CPA) in the United States and the European Panel Federation (EPF). We rely on contributions from these important sources.

This chapter discusses recent trends in wood-based panels markets in the Commonwealth of Independent States (CIS), Europe (EU/EFTA and "Other Europe") and North America (United States and Canada). The analysis focuses on particle board, medium density fibreboard (MDF) and structural panels, e.g. softwood plywood and oriented strand board (OSB). Please note that the definition of panels excludes veneer sheets and that particle board excludes OSB.

9.1 Overview

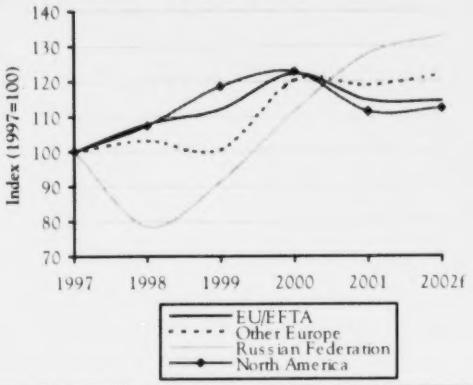
Notwithstanding the recession in North America overall consumption of wood-based panels in 2001 maintained 2000 levels mostly due to the lively construction sector. Consumption dropped slightly by 0.2% to 62.5 million m^3 (table 9.1.1 and graph 9.1.1).

In Europe as a whole, the economic activity of end use sectors followed the trend of the overall economy experiencing a slowdown. Consumption of wood-based panels dropped by 3.7% to 53.9 million m^3 following the 9.2% increase in 2000. Particle board consumption dropped by 2 million m^3, while fibreboard and plywood consumption stagnated. In the EU/EFTA group of countries, which represents 80% of total consumption, consumption was down by 4.4%. In "Other Europe" countries, consumption of wood-based panels was down marginally, by 1.1%.

In contrast, in the Russian Federation wood-based panels consumption followed the trend of the last two years, confirming the recovery of the sector, it was up by 14.5% and reached 4.2 million m^3.

For the North American economy in general, 2002 is a year of recovery. In the wood-based panels sector, a key element is that the recovery has been paced by construction and, in particular, its residential components. These showed exceptional resilience throughout the prior downturn, which kept the recession from being more severe. The dramatically low interest rates in the United States in 2001 have kept long-term mortgage rates below 6.6%, which is the lowest level when viewed in the context of the past three decades (see chapter 2, section 2.2.1). Besides interest rates, a second factor accounting for strong home demand is demographics, the net population gain is a factor for the continued housing strength. The brisk pace of construction activity has boosted demand for panels, although by not enough to cancel the continued capacity overhang from previous years.

GRAPH 9.1.1
Consumption of wood-based panels in the UNECE region, 1997-2001



Note: f = The Timber Committee's forecast trend for 2001 to 2002, made at the October 2001 session, was applied to the 2001 figure.
Source: UN COMPTRADE/EFI, 2002.

Increasing globalization is also changing trading patterns in wood products. Throughout 2001 and into early 2002, the terms of trade from the viewpoint of North American producers were hurt by the exceptional strength of the United States dollar. The weakness of the real facilitated Brazilian panel exports to Europe at the expense of North American producers. Exports to the Far East were also hurt by the strength of the dollar. One development that did not occur was significant inflows of panel imports from Europe, especially in oriented strand board, due to overcapacity of the product there. In early 2002, however, the dollar began to reverse direction and had fallen significantly against major world currencies by mid-year.

Wood-based panels trade flows in Europe over the period 1996 to 2000 show an increase in exports from CEEC to EU/EFTA more sharply since 1997, as this group of countries are developing their production

TABLE 9.1.1
Apparent consumption of wood-based panels in the UNECE region, 1997-2001
(Million m³)

	1997	1998	1999	2000	2001	% of total	
						1997	2001
EU/EFTA							
Particle board and OSB	25.53	26.68	27.95	29.46	27.66	67.6	63.9
Plywood	5.77	5.80	5.74	6.05	5.99	15.3	13.8
Fibreboard	6.47	8.26	8.62	9.73	9.62	17.1	22.2
Total	37.77	40.74	42.31	45.25	43.28	100.0	100.0
Change on previous year							
– Volume		2.97	1.56	2.94	-1.97		
– %		7.9	3.8	7.0	-4.4		
Other Europe							
Particle board and OSB	6.61	6.49	6.43	7.37	7.28	73.7	68.4
Plywood	0.63	0.69	0.62	0.89	0.96	7.1	9.0
Fibreboard	1.72	2.05	1.95	2.50	2.41	19.2	22.6
Total	8.96	9.24	9.01	10.77	10.65	100.0	100.0
Change on previous year							
– Volume		0.27	-0.23	1.76	-0.12		
– %		3.1	-2.5	19.6	-1.1		
Russian Federation							
Particle board and OSB	2.30	1.71	2.06	2.43	2.85	69.5	67.5
Plywood	0.37	0.40	0.41	0.55	0.59	11.1	14.1
Fibreboard	0.64	0.50	0.56	0.72	0.78	19.3	18.4
Total	3.31	2.60	3.03	3.69	4.23	100.0	100.0
Change on previous year							
– Volume		-0.71	0.43	0.66	0.53		
– %		-21.4	16.4	21.8	14.5		
North America							
Particle board and OSB	24.01	26.50	31.24	32.25	32.63	47.0	52.2
Plywood	19.99	20.17	20.83	20.52	20.32	39.2	32.5
Fibreboard	7.05	8.16	8.44	9.86	9.55	13.8	15.3
Total	51.05	54.83	60.51	62.62	62.50	100.0	100.0
Change on previous year							
– Volume		3.78	5.68	2.12	-0.12		
– %		7.4	10.4	3.5	-0.2		

Source: UNECE/FAO TIMBER database, 2002.

capacity in particle board, MDF and more recently OSB (table 9.1.2 and graph 9.1.2). Parallel to this trend, intra EU/EFTA flows are dropping in the same proportion.

Also since 1998, non-UNECE exports to both North America and EU/EFTA have increased considerably at a rapid pace. The major economic, financial and currency crisis affecting Asia, which boosted hardwood plywood exports, may explain this development.

In North America, the rapid expansion of the OSB and MDF export industry in Canada has taken place at the same pace as the increase of Canadian exports to the United States.

The European Panel Federation is launching a campaign under the theme "For environmental reasons: Use more wood", based on results of a recent study on life cycle analysis on a wide range of wood-based products, including panels. EPF has also made

TABLE 9.1.2

Major wood-based panels trade flows in UNECE region 1997-2000

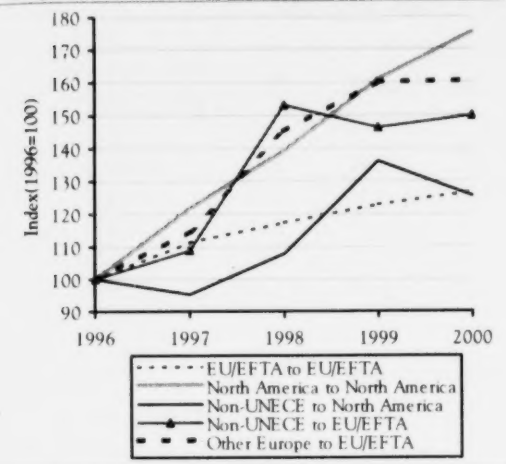
(% of global trade)

		From:																				
		EU/EFTA						Other Europe			CIS		North America			Non-UNECE						Grand total
	To:	DEU	FRA	AUT	BEL	FIN	Total	POL	CZE	Total	RUS	Total	CAN	USA	Total	IDN	MYS	BRA	NZL	THA	Total	
EU/EFTA	Germany		1.0	1.4	0.4	0.4	5.4	0.6	0.3	1.3	0.1	0.2	0.1	0.3	0.4	0.2		0.3			0.6	8.0
	United Kingdom	0.5	0.6	0.1	0.4	0.4	3.5			0.4	0.3	0.3	0.1	0.4	0.5	0.4	0.3	0.4			1.3	5.8
	Netherlands	0.7	0.3	0.1	0.7	0.2	3.2	0.1		0.1				0.1	0.2	0.1					0.3	3.8
	Italy	0.4	0.4	0.8		0.1	1.9			0.5	0.1	0.1	0.1	0.1	0.1	0.1		0.1			0.3	3.0
	France	0.6		0.1	0.6	0.1	2.5			0.1					0.1	0.1					0.3	2.9
	Spain	0.1	0.7		0.1		2.0							0.1	0.1						0.2	2.3
	Denmark	0.5				0.1	1.2	0.1		0.2	0.1	0.1			0.1						0.1	1.6
	Sweden	0.1				0.2	0.9	0.1		0.3	0.1	0.1										1.3
	Belgium	0.3	0.2				0.7									0.2		0.1			0.4	1.2
	Switzerland	0.3	0.2	0.3			1.0				0.1	0.1										1.1
	Austria	0.5					0.8		0.1	0.2												1.0
	Total	4.3	3.6	2.9	2.2	1.9	25.5	1.1	0.5	3.4	0.9	1.1	0.4	1.2	1.6	1.4	0.4	1.2			4.1	35.5
Other Europe	Poland	0.3					0.5		0.3	0.6		0.1										1.2
	Total	0.7	0.1	0.3		0.1	2.1	0.3	0.6	1.8	0.3	0.5			0.1						0.2	4.7
CIS	Russian Fed	0.1					0.2	0.1		0.1		0.2										0.5
	Total	0.1					0.2	0.2		0.4	0.4	0.7										1.4
North America	United States	0.2					0.6				0.4	0.4	17.5		17.5	1.4	0.8	0.7			4.1	22.7
	Canada	0.1					0.1							1.8	1.8						0.1	2.0
	Total	0.3	0.1			0.1	0.7			0.1	0.4	0.4	17.5	1.8	19.3	1.4	0.8	0.7			4.2	24.7
Non-UNECE	Japan			0.1			0.2						0.8	0.2	1.0	4.7	3.5		0.7		9.5	10.7
	China	0.2					0.3									1.2	1.6		0.1	0.2	3.7	4.0
	Hong Kong						0.2							0.1	0.1	0.8	1.2		0.1	0.2	2.8	3.1
	Taiwan P.o.C						0.2							0.1	0.1	1.1	1.0		0.1	0.1	2.6	2.9
	Republic of Korea				0.1		0.1						0.1	0.1	0.2	0.9	0.7			0.2	2.3	2.6
	Mexico													0.7	0.8	0.1					0.2	1.0
	Saudi Arabia						0.1									0.6	0.1				0.8	1.0
	Total	0.4	0.1	0.2	0.3	0.1	2.0			0.4	0.3	0.3	1.1	1.8	2.9	11.2	9.6	0.5	1.3	1.0	28.1	33.8
Grand total		5.8	3.8	3.4	2.6	2.2	30.5	1.7	1.1	6.1	2.4	3.0	19.0	4.8	23.8	14.1	10.8	2.4	1.4	1.1	36.7	100.0

Note: AUT = Austria, BEL = Belgium, BRA = Brazil, CAN = Canada, CHE = Switzerland, CHL = Chile, CHN = China, CZE = Czech Republic, DEU = Germany, ESP = Spain, EST = Estonia, FIN = Finland, FRA = France, GAB = Gabon, GBR = United Kingdom, HRV = Croatia, HUN = Hungary, IDN = Indonesia, ITA = Italia, JAP = Japan, KOR = Republic of Korea, LVA = Latvia, MAL = Malaysia, MEX = Mexico, MYS = Malaysia, NLD = Netherlands, NOR = Norway, NZL = New Zealand, PNG = Papua New Guinea, POL = Poland, P.o.C = Province of China, PRT = Portugal, RUS = Russian Federation, SVK = Slovakia, SWE = Sweden, THA = Thailand, USA = United States, ZAF = South Africa.

Source: UN COMTRADE/EFI, 2002.

GRAPH 9.1.2
Major wood-based panels trade flows, 1996-2000



Source: UN COMTRADE/EFI, 2002.

public two studies showing that wood products act as carbon sinks. EPF is of the opinion that the wood industries should be recognised as using wood in the most eco-efficient way. Policies encouraging countries to use biomass as renewable energy in the context of the Kyoto Protocol coupled with subsidies will increase competition for the raw material. EPF believes that only where the quality of the wood or the residues does not permit its use in production should these be destined to renewable energy.

9.2 Plywood

Overall plywood, softwood and hardwood, apparent consumption in EU/EFTA countries was down marginally by 1%. In "Other Europe" and in the Russian Federation apparent consumption increased by 7.9% and 7.2%, respectively. Exports in the Russian Federation were just over 1 million m^3, a 100% increase in 5 years (tables 9.2.1 and 9.2.3).

9.2.1 *Softwood plywood*

Softwood plywood production in North America continued on its downward path in 2001. Production declined by 4.6%, from 17.4 million m^3 in 2000 to 16.6 million m^3 in 2001 (table 9.2.4). Six facilities, which altogether account for over 1 million m^3 of capacity, closed (table 9.2.2). This came on top of seven closures in 2000. Although two of these 13 plants reopened in 2002, the permanent closure of the remaining nine have left the industry with about 2 million m^3 less capacity, or a 13.0% reduction in two years. Production by EU/EFTA countries in Europe was down by 5.0% to 1.7 million m^3, due to cutbacks by the major producers, Finland and Germany. Softwood plywood output increased in "Other Europe" and in the Russian Federation, by 6.3% and 12.9% to 458,000 m^3 and 140,000 m^3, respectively.

United States exports of softwood plywood to traditional markets such as Mexico, the Caribbean and Europe were once again down by 29.6% to 390,000 m^3. This was due to competition from Brazil, the increased competitiveness of which can be traced to the decline in value of its currency compared to the dollar. Canadian exports of softwood plywood were up by 16% to 675,000 m^3.

Imports into the United States, although relatively small, also rose, due to the same phenomenon. They attained 751,000 m^3, or 54.2% increase from 2000. Brazilian imports to North America approximately doubled.

By mid-2002, the dollar had sharply reversed course. Compared with the euro it had fallen from 1.16 to parity. As the dollar's slide accelerated, some traders expressed the view that markets lost by American exporters in Europe could begin to be recaptured. However, as Brazil is the main competitor for North American plywood in international markets, continued exports of low priced Brazilian plywood may reduce the likelihood of a significant recovery of market share for North American producers in Europe.

North American structural panel prices were volatile but overall continued to trend lower (graph 9.2.1). Excessive prior construction of capacity left surplus in OSB, which aborted price rallies for all structural panels and tended to return prices to near breakeven levels. The continued rationalization of plywood capacity, the restraint in new OSB capacity

GRAPH 9.2.1
North American structural panel composite price, 1994-2002

Source: *Random Lengths Export*, 2002.

TABLE 9.2.1
Plywood balance in the UNECE region, 1997-2001
(Million m³)

	1997	1998	1999	2000	2001	Timber Committee estimate for 2002[1]
EU/EFTA						
Production	2.96	3.19	3.25	3.34	3.27	3.39
Imports	4.66	5.11	5.04	5.35	5.31	5.33
Exports	1.86	2.50	2.54	2.63	2.59	2.71
Net trade	-2.81	-2.61	-2.49	-2.72	-2.72	-2.62
Apparent consumption	5.77	5.80	5.74	6.05	5.99	6.02
Other Europe						
Production	0.92	0.87	0.93	1.02	1.10	1.18
Imports	0.36	0.37	0.42	0.49	0.55	0.54
Exports	0.65	0.55	0.73	0.62	0.69	0.70
Net trade	0.29	0.18	0.31	0.13	0.14	0.16
Apparent consumption	0.63	0.69	0.62	0.89	0.96	1.01
Russian Federation						
Production	0.88	1.10	1.32	1.48	1.60	1.66
Imports	0.04	0.03	0.00	0.04	0.01	0.01
Exports	0.56	0.74	0.91	0.97	1.02	1.07
Net trade	0.52	0.71	0.91	0.94	1.01	1.06
Apparent consumption	0.37	0.40	0.41	0.55	0.59	0.60
North America						
Production	19.68	19.52	19.78	19.51	18.77	18.52
Imports	1.85	2.24	2.72	2.62	3.06	2.90
Exports	1.54	1.59	1.67	1.61	1.52	1.53
Net trade	-0.31	-0.65	-1.05	-1.00	-1.54	-1.37
Apparent consumption	19.99	20.17	20.83	20.52	20.32	19.89

[1] = The Timber Committee forecast trend for 2001-2002, made at the October 2001 session, was applied to the 2001 figure.
Source: UNECE/FAO TIMBER database 2002.

TABLE 9.2.2
United States plywood mills closed, by capacity, 2001
(1,000 m³)

Owner	*Location*	*State*	*Capacity*
Boise Cascade	Emmett	Idaho	160
Collins Pine	Klamath Falls	Oregon	150
Geertsen Group	Springfield	Oregon	90
Georgia Pacific	Louisville	Mississippi	260
Linn[illegible]n Plywood	Portland	Oregon	200
Willamette	Ruston	Louisiana	155
TOTAL			1 015

Source: USDA Forest Service, 2002.

additions, the continued strength in housing and recovery in the general economy improves prospects for market conditions in 2003.

9.2.2 *Hardwood plywood*

Hardwood plywood consumption in North America was up by 8.1% in 2001 reaching 3.9 million m³, mostly due to an important increase in imports, which were up by 10.4% to 2.2 million m³. South east Asia is the main supplier (table 9.2.5).

TABLE 9.2.3
Production and trade of plywood in the UNECE region, 1998-2001
(1,000 m³)

	1998	1999	2000	2001	Change 2000 to 2001	
					Volume	%
PRODUCTION						
EU/EFTA	3 191	3 251	3 337	3 273	-64	-1.9
of which:						
Finland	992	1 076	1 170	1 140	-30	-2.6
France	541	546	558	508	-50	-9.0
Italy	420	450	450	418	-32	-7.1
Other Europe	869	931	1 017	1 098	82	8.0
of which:						
Poland	178	223	261	256	-5	-1.9
Latvia	150	155	156	176	20	12.6
Czech Republic	108	110	115	150	35	30.4
Russian Federation	1 102	1 324	1 484	1 600	116	7.8
North America	19 517	19 779	19 515	18 772	-742	-3.8
Canada	2 049	2 228	2 244	2 326	83	3.7
United States	17 468	17 551	17 271	16 446	-825	-4.8
EXPORTS						
EU/EFTA	2 499	2 544	2 628	2 587	-41	-1.6
of which:						
Finland	832	939	1 006	1 009	3	0.3
Belgium	...	403	380	343	-37	-9.8
Other Europe	551	729	615	686	70	11.4
of which:						
Czech Republic	92	120	140	146	6	4.3
Latvia	138	129	128	143	15	11.8
Russian Federation	736	913	974	1 018	44	4.5
North America	1 588	1 668	1 614	1 518	-96	-5.9
Canada	755	956	941	1 030	89	9.5
United States	833	712	673	488	-185	-27.5
IMPORTS						
EU/EFTA	5 107	5 036	5 345	5 308	-37	-0.7
of which:						
United Kingdom	969	972	1 041	1 143	102	9.8
Germany	1 105	1 021	1 149	1 066	-83	-7.2
Other Europe	374	417	486	547	61	12.6
of which:						
Slovakia	88	90	82	132	50	61.0
Czech Republic	30	54	72	80	8	11.1
Russian Federation	29	3	38	12	-26	-68.0
North America	2 237	2 716	2 615	3 063	448	17.1
Canada	273	222	230	374	144	62.4
United States	1 964	2 494	2 385	2 689	304	12.7

Source: UNECE/FAO TIMBER database 2002.

TABLE 9.2.4
Production and trade of softwood plywood in the UNECE region, 1998-2001
(1,000 m³)

	1998	1999	2000	2001	Change 2000 to 2001	
					Volume	%
PRODUCTION						
EU/EFTA	1 724	1 793	1 840	1 748	-92	-5.0
of which:						
Finland	454	578	629	610	-19	-3.0
Germany	428	364	357	316	-41	-11.5
Austria	150	155	155	155	0	0.0
Other Europe	361	380	431	458	27	6.3
of which:						
Israel	109	109	109	109	0	0.0
Czech Republic	38	35	56	87	31	55.4
Bulgaria	23	44	53	65	12	22.6
Poland	45	56	60	51	-9	-15.0
Russian Federation	102	86	124	140	16	12.9
North America	17 481	17 695	17 409	16 606	-802	-4.6
Canada	1 749	1 928	1 944	2 026	83	4.3
United States	15 732	15 767	15 465	14 580	-885	-5.7
EXPORTS						
EU/EFTA	1 330	1 272	1 413	1 386	-27	-1.9
of which:						
Finland	383	510	546	520	-26	-4.7
Austria	153	154	199	254	55	27.5
Other Europe	150	344	200	205	5	2.4
of which:						
Czech Republic	43	44	64	65	1	1.6
Romania	22	23	36	40	4	10.5
North America	1 173	1 207	1 136	1 065	-71	-6.2
Canada	466	642	582	675	93	16.1
United States	707	565	554	390	-164	-29.6
IMPORTS						
EU/EFTA	3 198	2 689	3 022	2 862	-160	-5.3
of which:						
Germany	1 105	1 021	1 149	1 066	-83	-7.2
United Kingdom	400	403	451	453	2	0.4
Other Europe	117	104	133	201	68	50.7
of which:						
Czech Republic	8	13	19	62	43	226.3
Israel	18	28	48	48	0	0.0
North America	294	672	615	854	239	38.8
Canada	108	142	128	103	-25	-19.7
United States	186	530	487	751	264	54.2

Source: UNECE/FAO TIMBER database, 2002.

TABLE 9.2.5
Production and trade of hardwood plywood in the UNECE region, 1998-2001
(1,000 m³)

	1998	1999	2000	2001	Change 2000 to 2001	
					Volume	%
PRODUCTION						
EU/EFTA	1 468	1 458	1 498	1 525	28	1.8
of which:						
Finland	538	498	541	530	-11	-2.0
Italy	410	440	440	408	-32	-7.3
France	403	401	410	388	-22	-5.4
Denmark	2	2	1	95	94	9400.0
Other Europe	509	551	585	640	55	9.3
of which:						
Poland	133	167	201	205	4	2.0
Latvia	150	155	156	176	20	12.6
Czech Republic	70	75	59	63	4	6.8
Lithuania	36	32	38	50	12	33.0
Russian Federation	1 000	1 238	1 360	1 460	100	7.4
North America	2 036	2 084	2 106	2 166	60	2.8
Canada	300	300	300	300	0	0.0
United States	1 736	1 784	1 806	1 866	60	3.3
EXPORTS						
EU/EFTA	1 168	1 272	1 215	1 201	-14	-1.1
of which:						
Finland	449	429	460	489	29	6.3
Belgium	...	314	285	263	-21	-7.4
Other Europe	401	385	415	481	66	15.8
of which:						
Latvia	138	126	128	142	14	11.1
Poland	67	66	79	96	17	21.8
Russian Federation	627	913	974	1 018	44	4.5
North America	415	461	479	453	-25	-5.3
Canada	289	314	360	355	-4	-1.2
United States	126	147	119	98	-21	-17.6
IMPORTS						
EU/EFTA	1 909	2 347	2 323	2 446	123	5.3
of which:						
United Kingdom	570	569	590	690	100	17.0
Belgium	...	366	354	334	-20	-5.7
Other Europe	258	313	353	347	-6	-1.8
of which:						
Slovakia	69	73	62	90	28	45.2
Estonia	58	60	57	64	6	11.3
Russian Federation	25	3	38	12	-26	-68.0
North America	1 943	2 044	2 000	2 209	209	10.4
Canada	165	80	102	271	169	164.9
United States	1 778	1 964	1 898	1 938	40	2.1

Source: UNECE/FAO TIMBER database, 2002.

9.3 Oriented strand board

OSB production in North America continued its rapid upward trend in 2001. From 19.7 million m^3 in 2000, production climbed by nearly 1.5%, to 20.0 million m^3 (tables 9.3.1 and 9.3.2). The gain masked considerable difficulties for the industry to earn a profit, as the amount of capacity was greater than what the market could bear. Consequently two older, less efficient plants were closed in 2002. Furthermore, no new plants will come on line in 2002 because previous plans were postponed or cancelled. Nonetheless, continued excess supply required significant curtailments in mid-year as prices hovered near breakeven cost levels.

In Europe production of OSB set a new record level of 1.6 million m^3 in 2001, as new mills came on stream and others reached operational capacity (table 9.3.1). Four new mills came on stream in 2001 in Belgium, Bulgaria and Germany with a total capacity of nearly 1 million m^3, raising the total number of mills to eleven. Two of these mills are located in "Other Europe", Bulgaria and Poland, with a total capacity of 0.5 million m^3.

According to the European Panel Federation (EPF) *Annual Report*, the expansion of OSB consumption in Europe is due partly to the development of existing markets such as walls and roofs in structural applications, but above all to new applications: timber frame housing, flooring, packaging, decoration, repair and renovation and do-it-yourself markets. Capacity figures are reported in the *Annual Report*, for Europe as a whole.

The largest capacity expansion will take place in North America. In Europe, where capacity expanded rapidly over the past years, little change is expected to 2003. Notwithstanding, European production will increase during this period as on average, mills are working at 50% of the installed capacity (table 9.3.3).

It is increasingly obvious that OSB in North America is a maturing commodity. This is illustrated by, among other things, the significantly closer correlation of its price with the price of sawnwood, a complementary, older, well-established product. Both are used primarily for construction and both are delivered on site and used simultaneously. It is not surprising therefore that in 2001 their price movements

TABLE 9.3.1
OSB balance in the UNECE region, 1997-2001
(Million m^3)

	1997	1998	1999	2000	2001	Timber Committee estimate for 2002[1]
EU/EFTA						
Production	0.57	0.58	0.92	1.24	1.17	1.70
Imports	0.70	0.91	1.06	1.38	1.43	1.38
Exports	0.48	0.53	0.42	0.76	0.74	0.95
Net trade	-0.22	-0.37	-0.64	-0.62	-0.69	-0.43
Apparent consumption	0.79	0.96	1.56	1.86	1.86	2.13
Other Europe						
Production	0.15	0.36	0.37	0.37	0.46	0.46
Imports	0.12	0.13	0.15	0.28	0.40	0.40
Exports	0.21	0.30	0.38	0.45	0.46	0.47
Net trade	0.09	0.17	0.23	0.16	0.07	0.07
Apparent consumption	0.06	0.19	0.14	0.20	0.40	0.39
North America						
Production	14.50	16.21	17.97	19.75	20.04	20.82
Imports	4.99	5.81	6.64	6.86	7.28	7.27
Exports	5.20	6.04	6.89	7.09	7.46	7.72
Net trade	0.21	0.23	0.25	0.23	0.18	0.45
Apparent consumption	14.30	15.98	17.72	19.53	19.86	20.37

[1] = The Timber Committee forecast trend for 2001-2002, made at the October 2001 session, was applied to the 2001 figure.

Source: UNECE/FAO TIMBER database, 2002.

TABLE 9.3.2
Production and trade of OSB in the UNECE region, 1998-2001
(1,000 m³)

	1998	1999	2000	2001	Change 2000 to 2001	
					Volume	%
PRODUCTION						
EU/EFTA	583	923	1 235	1 174	-61	-4.9
of which:						
Germany	0	0	329	286	-43	-13.1
France	100	100	270	270	0	0.0
United Kingdom	223	223	236	260	24	10.2
Other Europe	360	365	365	462	97	26.6
of which:						
Poland	350	350	350	450	100	28.6
Romania	10	15	15	12	-3	-20.0
North America	16 210	17 971	19 753	20 042	289	1.5
Canada	6 274	7 694	7 847	7 942	95	1.2
United States	9 936	10 277	11 906	12 100	194	1.6
EXPORTS						
EU/EFTA	530	423	764	743	-21	-2.7
of which:						
Ireland	186	186	191	191	0	0.0
France	19	7	231	150	-81	-35.0
Other Europe	298	382	448	461	13	3.0
of which:						
Poland	170	290	328	283	-45	-13.7
Slovakia	57	28	83	104	21	25.3
North America	6 041	6 887	7 091	7 456	365	5.2
Canada	5 952	6 727	6 932	7 308	376	5.4
United States	89	160	159	148	-11	-6.9
IMPORTS						
EU/EFTA	905	1 063	1 385	1 433	48	3.5
of which:						
Spain	262	275	501	501	0	0.0
Germany	200	292	310	319	9	2.9
United Kingdom	110	67	72	94	22	30.8
Netherlands	98	111	111	77	-34	-30.5
Other Europe	133	155	284	396	112	39.4
of which:						
Slovakia	43	69	53	209	156	294.3
Poland	50	43	52	74	22	42.2
North America	5 811	6 636	6 865	7 279	414	6.0
Canada	59	123	111	112	1	1.3
United States	5 752	6 513	6 754	7 167	413	6.1

Source: UNECE/FAO TIMBER database, 2002.

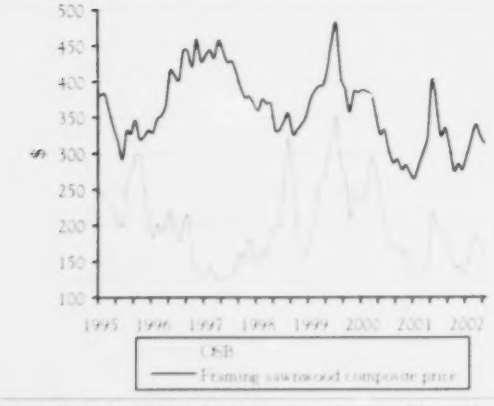
TABLE 9.3.3
Capacity development in the OSB industry, 2001-2003
(1,000 m³)

	2001	2002	2003
North America	21 847	22 017	23 437
Europe	3 110	3 110	3 260
China	10	10	10
Latin America	130	480	830
Rest of the World	0	0	131
	25 097	25 617	27 468

Source: *Annual Report*, European Panel Federation, 2002.

were nearly identical (graph 9.3.1). In previous years of OSB history, however, this was not the case. Rapid growth of market share led to different levels of demand while greater growth of capacity led to periodic market imbalances different from those experienced in the better balanced sawnwood sector. These caused prices to soar or crash and evolve along separate lines than sawnwood, as the historical price correlations show. The tighter contemporary price correlation among these products, a phenomenon that has continued in 2002, indicates that OSB has arrived at a similar level of maturity. This also implies that future levels of profitability will be more restrained, more like those in the sawnwood business than the sometimes extraordinarily high levels that many who have invested in OSB have come to expect.

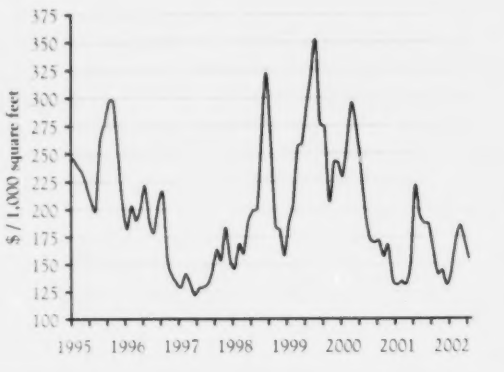
GRAPH 9.3.1
Prices of OSB and framing lumber in the United States, 1995-2002



Notes: Price for OSB is $ / 1,000 square feet on a 7/16-inch basis. Price for framing sawnwood composite is $ / 1000 board feet.
Source: *Random Lengths Yardstick*, 2002.

North American structural panel prices were volatile in 2001 and continued at generally low levels (graph 9.3.2). Excessive prior construction of OSB capacity left markets oversupplied. The continued rationalization of plywood capacity, the restraint in new OSB capacity additions, and the continued strength in housing coupled with recovery in the general economy improves the prospects of better markets in 2003. There is potential for substantial new capacity additions as many former plans, aborted by the slump, remain on the shelves. A strong profit recovery could launch those plans and result in another round of substantial capacity additions, on the order of 5 million m^3 by 2006 if all plans are carried out.

GRAPH 9.3.2
OSB price, United States, 1995-2002



Note: On a 7/16-inch basis.
Source: *Random Lengths Yardstick*, 2002.

Exports and imports of OSB in North America to and from markets outside the region are small. The main offshore outlet is Asia, where announced capacity has not yet appeared. There were some expectations that European mills would enter the vast American market. This has not occurred to any appreciable extent. Although imports tripled in 2001, they amount to less than 100,000 m^3, most of which came from plants in Germany, France, Poland and the United Kingdom.

Some European producers have contracted with North American quality certification agencies to grade their panels for the United States market, but differences in grading procedures, product requirements and distribution channels have apparently kept those producers from aggressively marketing much OSB. North American users, for example, expect one side of a panel to have a screened, slip-resistant surface, which would require a process modification for North American-bound output. Likewise, thickness swell and other property requirements in Europe and America

differ, which again require different formulations in the process. Companies need local representatives, which requires a large sales volume to justify. North American distribution channels are also well established.

9.4 Particle board

Particle board production in North America declined in 2001 reflecting the greater concentration of use of this product in industrial sectors. From 11.7 million m^3 in 2000, production retreated by 2.1%, to 11.5 million m^3 (tables 9.4.1 and 9.4.3).

TABLE 9.4.1
Particle board balance in United States and Canada
(1,000 m^3)

	2000	2001	% change
Canada			
Production	2 517	2 783	10.6
Imports	389	436	11.9
Exports	1 112	1 204	8.2
Apparent consumption	1 794	2 015	12.3
United States			
Production	9 256	8 738	-5.6
Imports	2 144	2 505	16.8
Exports	470	489	4.0
Apparent consumption	10 930	10 754	-1.6

Source: UNECE/FAO TIMBER database, 2002.

Production of particle board in Europe in 2001 dropped following a record year in 2000. In EU/EFTA countries production fell by 1.9 million m^3 to 27.9 million m^3 or 6.3%. In "Other Europe", production was down by 2.8% to 7.0 million m^3. Markets for particle board remain very competitive with prices under pressure. The industry continues to rationalise and restructure production and increase profitability, which is reflected in variations at the country level. In Germany the major producer, production fell by 12.8%, in Sweden by 8.8%, in Finland by 8.9% and in Denmark by 8.1%; while in other countries such as Austria production was up by 8.1%. The same occurred in "Other Europe": production increased by 14.6% in Lithuania and by13.9% in the Czech Republic and dropped by 11.9% in Turkey and 6.2% in Poland.

In recent years one of the problems afflicting particle board markets in North America has been the faster growth of capacity than of demand. Operating rates were thus depressed and pricing power was weak. At least three plants have been, or will be, closed permanently. With the rebound in the economy and flat capacity, conditions are expected to improve in 2003. According to the EPF *Annual Report*, in EPF member countries the 2.48 million capacity expansion of 2000 was followed in 2001 by a smaller capacity increment (table 9.4.2). This is a major restructuring process taking place in the European industry. Ten less competitive plants closed in 2001, representing 1.8 million m^3, 8 extension projects of 1.4 million m^3 total were implemented and two new mills of 0.9 million m^3 came on stream. The net change in 2001 was a gain of 0.46 million m^3 in capacity.

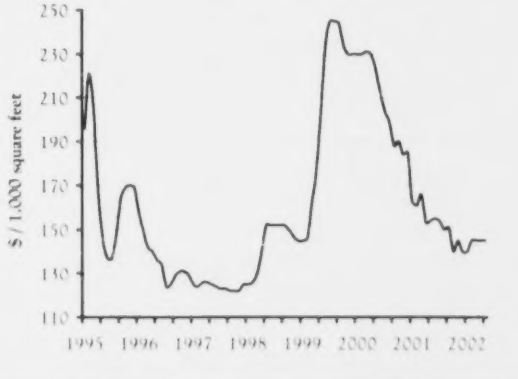
TABLE 9.4.2
Capacity development in the particle board industry, 2001-2002
(1,000 m^3)

	2001	2002
Europe	45,881	46,531
North America	14,396	14,833
China	5,740	5,940
Latin & South America	5,891	5,791
South-east Asia	5,655	5,655
North-east Asia	2,756	2,756
Australia and other Asia	1,284	1,384
Other	2,424	2,424
TOTAL	84,027	85,314

Source: *Annual Report*, European Panel Federation, 2002.

In 2001 in North America, prices experienced about a 10% drop in industrial grades from the previous year (graph 9.4.1).

GRAPH 9.4.1
Particle board prices in the United States, 1995-2002



Note: Underlayment grade.
Source: *Random Lengths Yardstick*, 2002.

Exports of particle board from Canada have tripled since 1991, but virtually all of it was to the United States. Exports of particle board from the United States

TABLE 9.4.3
Production and trade of particle board in the UNECE region, 1998-2001
(1,000 m^3)

	1998	1999	2000	2001	Change 2000 to 2001	
					Volume	%
PRODUCTION						
EU/EFTA	27 500	28 140	29 712	27 850	-1,862	-6.3
of which:						
Germany	9 375	9 491	10 012	8 726	-1,286	-12.8
Italy	2 950	3 070	3 200	3 240	40	1.3
France	3 482	3 587	3 544	3 162	-382	-10.8
Spain	1 880	2 203	2 783	2 783	0	0.0
Belgium	...	2 437	2 450	2 250	-200	-8.2
Austria	1 700	1 680	1 970	2 130	160	8.1
Other Europe	6 348	6 540	7 222	7 018	-204	-2.8
of which:						
Poland	2 124	2 266	2 681	2 515	-166	-6.2
Turkey	1 525	1 643	1 884	1 659	-225	-11.9
Czech Republic	640	700	720	820	100	13.9
Hungary	440	457	484	484	0	0.0
Russian Federation	1 568	1 987	2 335	2 500	165	7.1
North America	10 475	13 132	11 773	11 521	-252	-2.1
Canada	2 347	2 436	2 517	2 783	266	10.6
United States	8 128	10 696	9 256	8 738	-518	-5.6
EXPORTS						
EU/EFTA	8 472	8 169	8 655	8 480	-175	-2.0
of which:						
Germany	1 658	1 586	2 050	1 929	-121	-5.9
Belgium	...	1 823	2 012	1 778	-234	-11.6
Austria	1 233	1 182	1 393	1 567	174	12.5
France	1 278	1 332	992	1 105	113	11.4
Other Europe	1 234	1 426	1 612	2 046	433	26.9
of which:						
Czech Republic	...	421	398	482	84	21.1
Poland	145	290	324	446	123	37.9
Russian Federation	97	95	135	120	-15	-11.1
North America	1 597	1 496	1 582	1 693	111	7.0
Canada	1 073	1 054	1 112	1 204	92	8.2
United States	524	442	470	489	19	4.0
IMPORTS						
EU/EFTA	6 699	6 416	6 552	6 431	-121	-1.9
of which:						
Germany	1 594	1 230	1 284	1 199	-85	-6.6
United Kingdom	1 043	996	1 093	1 170	77	7.1
France	622	621	680	673	-7	-1.0
Netherlands	622	636	636	600	-36	-5.7
Other Europe	1 182	1 182	1563	1 909	346	22.1
of which:						
Poland	406	184	304	420	116	38.1
Slovakia	92	86	95	275	180	189.5
North America	1 647	1 885	2 533	2 941	407	16.1
Canada	219	469	389	436	46	11.9
United States	1 428	1 416	2 144	2 505	361	16.8

Source: UNECE/FAO TIMBER database, 2002.

have remained relatively flat over the past decade and go predominantly to Canada and Mexico. As with other panels, a strong dollar handicaps United States exports to Europe and Asia. As in North America, in Europe most of the trade in particle board is intra-European, only 10% of exports is exported outside the region, mostly to South East Asia and smaller volumes to China and North and South America.

9.5 Fibreboard

Overall fibreboard consumption in North America dropped in 2001 by 3.1% to 9.6 million m^3 due to an important drop in hardboard consumption in the United States. MDF consumption showed only a slight decrease from 2000 levels (tables 9.5.1 and table 9.5.2). The United States and Canada did not provide new data for insulating board. In EU/EFTA countries overall fibreboard consumption remained at 2000 levels, 9.6 million m^3, influenced by the continued growth of the MDF industry, which represents 76.4% of total fiberboard consumption. In the "Other Europe" subregion consumption in 2001 dropped by 3.6% to 2.4 million m^3, although production had increased significantly by 6.9%. In the Russian Federation consumption increased by 8.3% to 0.8 million m^3.

9.5.1 *Hardboard*

Production of hardboard in 2001 in North America dropped by 16.4%, to 1.2 million m^3 due to an important decrease in the United States of 20.8% (table 9.5.3). In EU/EFTA, "Other Europe" and in the Russian Federation hardboard production remained close to 2000 levels showing slight changes.

TABLE 9.5.1
Fibreboard balance in the UNECE region, 1997-2001
(*Million* m^3)

	1997	*1998*	*1999*	*2000*	*2001*	*Timber Committee estimate for 2002*[1]
EU/EFTA						
Production	6.40	8.09	8.49	9.28	9.70	9.82
Imports	3.93	4.53	4.69	6.21	5.89	5.83
Exports	3.86	4.36	4.56	5.76	5.97	6.40
Net trade	-0.07	-0.17	-0.13	-0.45	0.08	0.57
Apparent consumption	6.47	8.26	8.62	9.73	9.62	9.25
Other Europe						
Production	2.01	2.29	2.27	2.62	2.80	2.92
Imports	0.57	0.76	0.67	1.12	1.06	1.04
Exports	0.86	1.00	0.99	1.24	1.45	1.55
Net trade	0.29	0.24	0.31	0.12	0.39	0.51
Apparent consumption	1.72	2.05	1.95	2.50	2.41	2.41
Russian Federation						
Production	0.75	0.62	0.78	0.89	0.90	0.95
Imports	0.06	0.05	0.04	0.10	0.08	0.08
Exports	0.17	0.17	0.26	0.28	0.20	0.22
Net trade	0.11	0.12	0.22	0.18	0.12	0.14
Apparent consumption	0.64	0.50	0.56	0.72	0.78	0.81
North America						
Production	7.32	8.24	8.43	8.41	8.18	8.25
Imports	1.08	1.24	1.64	3.11	3.26	3.63
Exports	1.34	1.33	1.63	1.67	1.88	1.94
Net trade	0.27	0.09	-0.01	-1.44	-1.38	-1.68
Apparent consumption	7.05	8.16	8.44	9.86	9.55	9.93

[1] = The Timber Committee forecast trend for 2001-2002, made at the October 2001 session, was applied to the 2001 figure.

Source: UNECE/FAO TIMBER database, 2002.

TABLE 9.5.2
Production and trade of fibreboard in the UNECE region, 1998-2001
(1,000 m^3)

	1998	1999	2000	2001	Change 2000 to 2001	
					Volume	%
PRODUCTION						
EU/EFTA	8 087	8 487	9 282	9 695	413	4.4
of which:						
Germany	1 985	2 506	2 974	2 974	0	0.0
Italy	1 450	1 260	1 325	1 260	-65	-4.9
Spain	1 079	1 080	1 085	1 085	0	0.0
France	801	866	1 015	1 040	25	2.5
Other Europe	2 293	2 267	2 623	2 801	178	6.8
of which:						
Poland	1 112	1 149	1 265	1 351	85	6.7
Turkey	357	348	422	386	-36	-8.5
Bulgaria	66	66	234	282	48	20.5
Romania	45	79	82	206	124	151.2
Russian Federation	618	777	890	903	13	1.5
North America	8 245	8 431	8 415	8 177	-238	-2.8
Canada	1 245	1 454	1 425	1 433	8	0.6
United States	7 000	6 977	6 990	6 744	-246	-3.5
EXPORTS						
EU/EFTA	4 358	4 561	5 759	5 969	210	3.6
of which:						
Germany	1 017	1 149	2 215	2 362	147	6.6
France	527	673	738	701	-36	-4.9
Austria	254	301	301	569	268	89.1
Italy	483	477	587	433	-154	-26.2
Other Europe	997	988	1 237	1 453	215	17.4
of which:						
Poland	454	433	564	624	60	10.6
Estonia	195	179	196	188	-8	-3.9
Russian Federation	173	257	279	200	-79	-28.3
North America	1 331	1 633	1 669	1 883	214	12.8
Canada	883	1 147	1 171	1 434	263	22.4
United States	448	486	498	449	-49	-9.8
IMPORTS						
EU/EFTA	4 533	4 690	6 207	5 894	-313	-5.0
of which:						
Germany	675	630	1 320	1 126	-194	-14.7
United Kingdom	891	772	867	988	121	13.9
Italy	337	398	525	618	93	17.7
Belgium	...	231	663	546	-117	-17.6
Other Europe	757	674	1 119	1 060	-58	-5.2
of which:						
Poland	171	155	244	263	19	7.8
Czech Republic	54	97	146	205	59	40.4
Russian Federation	54	40	104	76	-28	-26.9
North America	1 244	1 641	3 112	3 258	146	4.7
Canada	212	246	529	514	-15	-2.7
United States	1 032	1 395	2 583	2 744	161	6.2

Source: UNECE/FAO TIMBER database, 2002.

TABLE 9.5.3
Production and trade of hardboard in the UNECE region, 1998-2001
(1,000 m³)

	1998	1999	2000	2001	Change 2000 to 2001	
					Volume	%
PRODUCTION						
EU/EFTA	1 809	1 687	1 734	1 787	53	3.0
of which:						
Italy	800	610	610	610	0	0.0
Germany	309	336	336	336	0	0.0
France	115	115	125	199	74	59.2
Other Europe	864	743	898	895	-3	-0.4
of which:						
Poland	289	249	258	242	-16	-6.2
Estonia	177	170	177	180	3	1.7
Russian Federation	525	615	656	646	-10	-1.5
North America	1 377	1 361	1 379	1 153	-225	-16.4
Canada	108	136	141	173	33	23.1
United States	1 269	1 225	1 238	980	-258	-20.8
EXPORTS						
EU/EFTA	1 100	1 172	2 116	2 290	173	8.2
of which:						
Germany	453	557	1 319	1 377	58	4.4
Austria	107	131	131	207	76	58.2
Other Europe	475	516	466	501	35	7.5
of which:						
Poland	105	152	172	188	16	9.2
Estonia	170	153	65	74	10	15.3
Russian Federation	173	257	279	200	-79	-28.3
North America	376	403	435	474	39	9.0
Canada	221	244	283	325	42	14.9
United States	155	159	152	149	-3	-2.0
IMPORTS						
EU/EFTA	1 374	1 324	1 754	1 634	-120	-6.8
of which:						
Germany	279	221	407	343	-64	-15.7
United Kingdom	192	141	250	233	-17	-6.8
Belgium	...	98	199	208	9	4.5
France	128	110	172	180	8	4.8
Other Europe	394	338	450	501	52	11.5
of which:						
Czech Republic	39	71	116	162	46	39.7
Poland	81	62	83	82	-1	-1.2
North America	341	407	507	501	-5	-1.1
Canada	78	68	211	189	-21	-10.2
United States	263	339	296	312	16	5.4

Source: UNECE/FAO TIMBER database, 2002.

9.5.2 *Medium density fibreboard*

North America, because of its huge production of sawnwood with its attendant residues, is a natural location for composites such as MDF. Because of the ready availability of low-cost wood residues, MDF has made rapid strides in the region. The diminished availability of clear, old growth Ponderosa pine also created a vacuum in moulding and millwork applications that MDF, with its superior machineability and finishing characteristics, was able to exploit. It continues to make great strides as a replacement for sawnwood, plywood and particle board in furniture. The rising popularity of thin laminate flooring has boosted MDF consumption. Use of MDF also serves as a replacement for hardboard in furniture and cabinetry. It is intermediate in manufacturing cost between plywood and OSB on the one hand and particle board on the other.

Despite the recession in the United States, MDF production in 2001 in North America remained close to 2000 levels, at 3.3 million m^3 (table 9.5.5). Production in the EU/EFTA countries in 2001 continued the rapid expansion of the industry, setting a new record of 7.4 million m^3; furniture and laminated flooring are the major users of MDF. According to the EPF *Annual Report*, MDF operating rates increased in 2001 to 88% of total capacity, setting also a new record. Production in "Other Europe" countries expanded in 2001 to 1.5 million m^3, or 12.8%. Major increases occurred in Poland 10.7% and Romania, where production increased to 174,000 m^3 as a result of new capacity coming on stream.

Following the capacity expansions of 0.5 million m^3 in Europe in 2001, in Germany, Slovenia and France, further expansions are announced in France and Spain in 2002 (table 9.5.4). The European MDF industry is also experiencing some restructuring as two relatively small mills, representing 200,000 m^3 were closed down in 2000.

TABLE 9.5.4
Capacity development in the MDF industry, 2001-2002
(1,000 m³)

	2001	2002
Europe	11 998	12 671
North America	5 446	5 446
China	4 058	4 498
Latin America	1 962	2 767
South-East Asia	2 631	2 671
North-East Asia	1 743	1 770
Australia and other Asia	1 645	1 660
Other	390	520
TOTAL	29 873	32 003

Source: *Annual Report*, European Panel Federation 2002.

MDF exports in North America have largely been confined within the region, but imports from Europe and South America are making up a larger share of consumption. New Zealand, Chile and Germany are among new offshore suppliers. European exports to the Far East represent 7% of total exports. Exports from "Other Europe" to EU/EFTA, increased by 48.4% to 0.45 million m^3, the main exporters are Poland, Romania, Slovenia and the Czech Republic.

Industrial grade MDF prices have been reflecting the improved capacity utilization fundamentals and have gained about 5% over 2000, a level that has been maintained into the first half of 2002.

9.5.3 *Insulating board*

Production of insulating board in EU/EFTA and "Other Europe" rose by 4% to 0.54 million m^3 and by 3.2% to 0.42 million m^3, respectively. The United States and Canada did not provide new data for insulating board (table 9.5.6).

9.6 Conclusion

The wood-based panels sector in Europe and North America has invested heavily in new production capacities and has been facing the cumulative effects of various market and structural outcomes. Demand has not always followed at the same pace as the capacity build-up, creating in certain cases manufacturing overcapacity, which, coupled with increased competition from other panel products and market sluggishness, have depressed prices. Under these conditions the OSB industry in North American and MDF in Europe have expanded at high annual growth rates. The need for increased profitability in difficult market conditions has seen relative recent less efficient mills closed and replaced by mills using the latest technology, while others are going through difficult financial situations.

9.7 References

APA – The Engineered Wood Association. *Regional Production & Market Outlook 2001-2006*. Tacoma, Washington, 2001.

Composite Panel Association. North America *Capacity Report 2001*. Gaithersburg, Maryland.

Europäischer Wirtschaftsdienst (EUWID). *Wood Products and Panels, 2001*. Germsbach, Germany.

European Panel Federation. *Annual Report 2001-2002*. Brussels, Belgium.

Random Lengths Yardstick, 2002. Eugene, Oregon.

TABLE 9.5.5

Production and trade of medium density fibreboard in the UNECE region, 1998-2001

(1,000 m³)

	1998	1999	2000	2001	Change 2000 to 2001	
					Volume	%
PRODUCTION						
EU/EFTA	5 734	6 293	7 064	7 405	341	4.8
of which:						
Germany	1 566	2 032	2 500	2 500	0	0.0
Spain	969	970	975	975	0	0.0
France	636	691	830	781	-49	-5.9
United Kingdom	390	515	700	757	57	8.1
Italy	650	650	715	650	-65	-9.1
Belgium	...	483	320	450	130	40.6
Other Europe	1 160	1 252	1 316	1 484	168	12.8
of which:						
Poland	637	702	768	850	82	10.7
Turkey	357	348	284	259	-25	-8.8
Romania	10	16	38	174	136	357.9
Bulgaria	20	30	78	94	16	20.5
Russian Federation	80	140	215	239	24	11.2
North America	3 192	3 394	3 360	3 348	-12	-0.4
Canada	712	893	859	835	-24	-2.8
United States	2 480	2 501	2 501	2 513	12	0.5
EXPORTS						
EU/EFTA	2 679	2 905	3 021	2 962	-59	-1.9
of which:						
Germany	513	533	730	772	42	5.8
France	328	509	501	518	18	3.5
Italy	342	331	463	357	-106	-22.9
Ireland	295	287	287	287	0	0.0
Other Europe	281	195	305	453	148	48.4
of which:						
Poland	212	126	181	184	4	2.0
Romania	1	1	31	156	125	403.2
North America	723	978	989	1 075	86	8.7
Canada	552	774	747	885	138	18.5
United States	171	204	242	190	-52	-21.5
IMPORTS						
EU/EFTA	2 444	2 559	3 363	2 874	-488	-14.5
of which:						
Germany	270	246	640	499	-141	-22.0
United Kingdom	572	496	421	386	-35	-8.2
Belgium	...	130	449	326	-123	-27.4
Spain	297	309	309	309	0	0.0
Other Europe	254	230	423	422	-1	-0.2
of which:						
Poland	60	68	106	126	20	18.6
Israel	13	51	66	66	0	0.0
Russian Federation	54	40	40	40	0	0.0
North America	704	973	2 310	2 359	49	2.1
Canada	92	113	261	260	-1	-0.4
United States	612	860	2 049	2 099	50	2.4

Source: UNECE/FAO TIMBER database, 2002.

TABLE 9.5.6
Production and trade of insulating board in the UNECE region, 1998-2001
(1,000 m³)

	1998	1999	2000	2001	Change 2000 to 2001	
					Volume	%
PRODUCTION						
EU/EFTA	544	508	485	504	20	4.0
of which:						
Germany	110	138	138	138	0	0.0
Switzerland	110	120	115	130	15	13.0
France	50	60	60	60	0	0.0
Other Europe	269	272	409	422	13	3.2
of which:						
Poland	186	198	239	259	19	8.1
Bulgaria	7	7	78	94	16	20.5
North America	3 676	3 676	3 676	3 676	0	0.0
Canada	425	425	425	425	0	0.0
United States	3 251	3 251	3 251	3 251	0	0.0
EXPORTS						
EU/EFTA	579	484	622	717	95	15.3
of which:						
Germany	51	59	166	213	47	28.3
Austria	39	40	40	175	135	336.6
Other Europe	241	277	466	499	33	7.0
of which:						
Poland	138	154	211	251	41	19.2
Estonia	25	27	129	113	-16	-12.3
North America	232	252	245	334	88	36.0
Canada	110	129	141	224	82	58.2
United States	122	123	104	110	6	5.8
IMPORTS						
EU/EFTA	714	806	1 091	1 386	295	27.0
of which:						
United Kingdom	128	135	197	369	172	87.5
Germany	126	163	273	284	11	4.0
Italy	77	129	189	243	54	28.6
Netherlands	142	140	140	151	11	8.0
Other Europe	109	106	246	137	-109	-44.3
of which:						
Poland	31	25	56	56	0	0.7
Lithuania	5	4	14	11	-3	-19.7
North America	199	261	295	398	103	34.8
Canada	42	65	57	65	8	13.7
United States	157	196	238	333	95	39.9

Source: UNECE/FAO TIMBER database, 2002.

Chapter 10
Gradual upturn underway in paper, paperboard and woodpulp markets[1]

Highlights

- European and North American pulp and paper markets began to show signs of a gradual upturn during the first half of 2002, after a downturn that lasted from 2000 through 2001.
- Spot prices for market pulp, recovered paper, and some paper and paperboard grades turned upward in the first half of 2002, and some producers raised list prices in the second quarter.
- Profits were weak in 2001, for most North American and European producers, especially for United States producers who were burdened by an exceptionally strong dollar (however the dollar lost value rapidly in mid 2002).
- United States paper and paperboard demand and output contracted through 2001 and into the first quarter of 2002, extending a multi-year downturn from historical peaks in the second half of 1999.
- European and Canadian pulp and paper production receded also in 2001, after producers had achieved record levels of paper and paperboard output earlier in the year 2000.
- Capacity rationalization continued in the United States in 2001 with closure of 26 paper and paperboard mills and shut down of some other mills' paper machines.
- Russia's pulp and paper sector continued to experience growth, although at a slower pace, boosted by low currency exchange rates, record high exports, political stabilization and tax reform.
- Contrary to declines in North America and EU/EFTA, production of paper, paperboard and woodpulp increased in "Other Europe" in 2001, however consumption fell indicating greater export volume.
- Globally, pulp and paper capacity growth remains well below historical growth rates, with the exception of ongoing capacity growth in parts of Asia, particularly in China.

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Secretariat introduction

Pulp, paper and paperboard markets are global, yet this chapter's analysis by experts within each subregion of the UNECE illustrates that market developments vary between the UNECE subregions. There are also many similarities among the observed trends. Dr. Peter J. Ince, Research Forester, USDA Forest Service coordinated the production of this chapter. His co-authors were Professor Eduard Akim, PhD, Saint Petersburg State Technological University of Plant Polymers and the All-Russian Research Institute of Pulp and Paper Industry and Mr. Bernard Lombard, Recycling and Economics Manager, Confederation of European Paper Industries (CEPI).

This is the third time that Dr. Ince has helped us with this chapter and Dr. Ince is a member of the new UNECE&FAO Team of Specialists on Forest Products Markets and Marketing. He also has contributed to the Timber Committee market discussions as well as has collaborated in other projects of the Committee's teams of specialists. Simultaneously we express our appreciation to the USDA Forest Service, Forest Products Laboratory and International Forestry Division for making available the time and travel possibilities to work with us in Geneva.

Professor Akim is also on the UNECE&FAO Team of Specialists on Forest Products Markets and Marketing and he is a member of the FAO Advisory Committee on Paper and Wood Products. Once again, in his second participation in this project, he contributed his insight into the state of the pulp and paper industry in the Russia Federation. He too has participated at the Timber Committee market discussions, sometimes on broader issues than pulp and paper markets.

Mr. Lombard and his colleague from CEPI, Mr. Eric Kilby, Statistics Manager, have contributed their expertise on European markets for the second time to the chapter which we greatly appreciate. Collaboration of CEPI was ensured by Ms. Marie Arwidson, Director General of CEPI.

10.1 Introduction

This chapter explains recent trends in European, North American and Russian paper and paperboard markets, along with trends in woodpulp and fibre markets. These market trends relate to pulpwood use trends which are discussed in preceding chapters in the context of overall trends in wood raw material use. This chapter also reports UNECE/FAO statistics for pulp, paper and paperboard organized into the sub-regions of CIS, EU/EFTA, Other Europe and North America. When industry statistics from the Confederation of European Paper Industries (CEPI) or other sources are used, the text indicates the different basis.

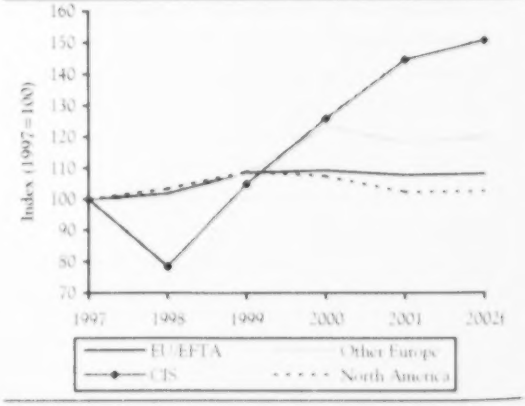
10.2 Paper and paperboard markets

Paper and paperboard markets, along with global economic growth, appeared to be in the early stages of an upturn by mid 2002, following an economic downturn that extended from late in 2000 through 2001. A drop in overall industrial production in Europe and North America translated directly into a corresponding drop in demand for packaging grades of paper and paperboard, while an abrupt halt in overall business growth and business investment led to an even larger drop in business spending for advertising and demand for graphic papers used in business and advertising applications. The decline in paper and paperboard consumption was evident in three UNECE subregions in 2001, North America down 4.8%, EU/EFTA down 1.3% and "Other Europe" down 4.2% (graph 10.2.1). Only in the CIS subregion did consumption increase, led by a 19% gain in the Russian Federation, continuing the 3-year trend (complete apparent consumption tables appear in the annex).

In pulp, paper and paperboard markets, declining demand, declining prices, and declining industry profits had characterized the recent downturn from the second half of the year 2000 through 2001, but signs of an upturn became widely apparent in the first half of 2002. Spot prices for market pulp and recovered paper turned upward early in 2002, followed by an upturn in

GRAPH 10.2.1

Consumption of paper and paperboard in the UNECE region, 1997-2002



Note: f = The Timber Committee's forecast trend for 2001 to 2002, made at the October 2001 session, was applied to the 2001 figure.
Source: UNECE/FAO TIMBER database, 2002.

spot prices for some paper and paperboard commodities in the second quarter. Toward the end of the second quarter, higher list prices were announced for paper and paperboard by many producers in Europe and North America. Market pulp inventories were also declining as prices were firming up in the first half of 2002. Nevertheless, although pulp, paper and paperboard commodity prices were firming up by mid year, they still remained well below the preceding peak levels of the year 2000, and far below the historical peak levels of 1995. For example, prices for bleached sulphate market pulp recovered to a level in the vicinity of $500 per m.t. in Europe and North America by mid-year 2002, after having dipped to lows in the range of $400 to $450 earlier in the year. However, prices still remained well below the $700 per m.t. levels observed late in 2000, and far below the $900 per m.t. levels of 1995.

European and Canadian pulp and paper production levels receded in 2001, particularly in the case of graphic papers, after reaching record levels of paper and paperboard output earlier in the year 2000 (table 10.2.1). Apparent consumption of paper and paperboard dropped by about 4% in Europe (according to data from CEPI) and by 4.8% in North America (table 10.2.2). Consumption reportedly increased by 15% in Russia and by 14.2% among the CIS countries as a whole, although consumption in Russia still remains below the historical peak consumption levels of the 1988 to 1989 period. United States paper and paperboard consumption and production continued to decline sharply in 2001 (and even well into the first quarter of 2002) extending a protracted United States downturn that went back to historical peaks in 1999. The downturn in paper and paperboard consumption and production in both Europe and North America reflects the broader economic downturn that occurred globally from 2000 into 2001.

The broad nature of the recent economic downturn also suggests that the ongoing upturn in pulp and paper markets is likely to unfold gradually through 2002 and into 2003. The recent downturn was spawned by a broad decline in overall industrial production and capacity utilisation, along with dislocation of business investment and exceptional currency exchange values. It seems likely to take some time, perhaps well into 2003 or beyond, before global industrial output, capacity utilisation, business investment, and business growth can return to levels experienced in the late 1990s prior to the recent downturn.

10.2.1 Paper and paperboard in Europe

In comparison with the previous two years, 2001 proved to be a difficult one for most paper and paperboard producers in Europe. Although the final quarter of the year showed a small improvement in volume terms over the previous quarter, the overall output in 2001 was below that of 2000. With only one or two exceptions, most European countries saw a contraction in paper and paperboard output in 2001.

Although the year started with production almost matching 2000 levels, output dipped during the middle quarters and only recovered slightly in the final three months, according to data compiled by CEPI. During 2001 CEPI member countries produced 88.2 million m.t. of paper and paperboard, or about 94% of total European production (EU/EFTA and "other Europe")[2]. This was a decrease of 2.7% over 2000. However, this was a less dramatic decline than that experienced in some other regions of the world, particularly North America for example. Also, despite this decline, the overall level of European production remains high, with the 2001 total exceeding 1998 by over 5 million m.t. The average annual increase since 1998 has been around 2.5% per annum. The operating rate (capacity utilisation) in the paper industry fell from 93% in 2000 to 89% in 2001.

When looking at the output of different grades according to CEPI production data, an inconsistent picture emerges. Although overall output of graphic paper grades declined by 4%, newsprint production rose by 1.3%. Production of uncoated graphic grades fell by 3%, while output of coated grades fell by 7.9%, reflecting a steep drop in printing paper demand. Mechanical grades (dropping by 4.9%) achieved better comparative output levels than woodfree grades (dropping by 6.2%). Production of packaging grades fell by 1.7% with case materials virtually unchanged, and carton board down by 1.8%. Output of wrappings fell by 3.7%. Hygienic paper manufacturers increased their output by 1.3%. The overall consumption of paper and paperboard among CEPI member countries in 2001 fell by 3.8% from its year 2000 level, a decrease of 3.2 million m.t. to 81.3 million m.t. At the same time GDP among CEPI member countries increased by

[2] CEPI is a non-profit-making organization representing pulp and paper producers in 18 member countries, including 13 of the 15 European Union Member States (less Greece and Luxembourg) plus Norway and Switzerland along with three Associate Members, Hungary, the Czech and Slovak Republics. Through its member countries, CEPI represents some 1,000 pulp, paper and board-producing companies across Europe, from small and medium-sized enterprises to multinationals. Data reported by CEPI on European pulp and paper trends tends to be more current than data reported to UNECE by some EU/EFTA countries, and hence CEPI data are used in this discussion.

1.6% (Eurostat - EU15). The slowing down of the European economy, beginning towards the end of 2000, was reflected in the paper and board market throughout 2001.

As in 2000, there was no great divergence in consumption trends among major sectors, however the trends were consistently downward rather than upward. Consumption of graphic paper grades decreased by 5.7% (2.4 million m.t.). Deliveries of graphic paper within CEPI countries fell by 5.8%, with imports down by 4.4% and exports down by 1.5%. Overall consumption of packaging grades decreased by 2.3% by 0.8 million m.t. However, imports of packaging grades also dropped by 1.9%, while exports rose fairly significantly, by 11.5%. Deliveries of packaging grades within CEPI countries declined by 2.3%. Consumption of newsprint decreased by 1.2% to 10.9 million m.t. among CEPI countries. Imports from outside the CEPI area fell by 2%. Deliveries to export markets fell for the second year by 10% and deliveries within the internal CEPI market decreased by 1.1%.

TABLE 10.2.1

Production of paper and paperboard in the UNECE region, 1998-2001

(1,000 m.t.)

	1998	1999	2000	2001	Change 2000 to 2001	
					Volume	%
GRAPHIC PAPERS						
EU/EFTA	41 336	42 586	44 821	42 923	-1 898	-4.2
of which:						
Finland	9 243	9 392	9 810	8 955	-855	-8.7
Germany	8 260	8 401	9 335	8 923	-412	-4.4
Sweden	5 023	5 125	5 378	5 254	-124	-2.3
Other Europe	2 109	2 327	2 413	2 420	7	0.3
of which:						
Poland	594	667	590	600	10	1.7
Slovakia	221	511	568	591	23	4.0
Russian Federation	1 869	2 188	2 269	2 298	29	1.3
North America	42 964	44 618	45 193	41 340	-3 853	-8.5
Canada	13 736	14 884	15 534	14 504	-1 030	-6.6
United States	29 228	29 734	29 659	26 836	-2 823	-9.5
SANITARY AND HOUSEHOLD						
EU/EFTA	4 716	4 937	5 054	5 206	73	1.4
of which:						
Italy	1 102	1 182	1 219	1 224	6	0.5
Germany	931	954	1 017	1 027	10	1.0
United Kingdom	635	718	724	738	14	1.9
Other Europe	764	776	740	768	27	3.7
of which:						
Croatia	181	179	179	179	0.0	0.0
Slovakia	114	84	105	118	13	12.4
Russian Federation	94	106	111	120	9	8.1
North America	6 598	6 876	6 922	7 047	125	1.8
Canada	624	664	652	685	33	5.1
United States	5 974	6 212	6 270	6 362	92	1.5

Sources: UNECE/FAO TIMBER database and CEPI, 2002.

TABLE 10.2.1 (contd.)

Production of paper and paperboard in the UNECE region, 1998-2001

(1,000 m.t.)

	1998	1999	2000	2001	Change 2000 to 2001	
					Volume	%
PACKAGING MATERIALS						
EU/EFTA	31 845	33 074	34 793	34 147	-646	-1.9
of which:						
Germany	5 983	6 217	6 561	6 737	176	2.7
Sweden	4 429	4 527	4 968	4 857	-111	-2.2
France	4 347	4 395	4 600	4 360	-240	-5.2
Other Europe	3 502	3 344	3 895	4,046	151	3.9
of which:						
Turkey	918	940	1 067	1 088	21	2.0
Poland	886	873	1 051	1 050	-1	-0.1
Russian Federation	1 242	1 705	2 479	2 773	294	11.9
North America	53 511	55 257	53 044	50 844	-2 200	-4.1
Canada	4 365	4 582	4 585	4 489	-96	-2.1
United States	49 146	50 675	48 459	46 355	-2 104	-4.3
OTHER PAPER AND PAPERBOARD						
EU/EFTA	3 497	3 606	3 964	3 863	-101	-2.5
of which:						
Germany	1 137	1 170	1 270	1 192	-78	-6.1
United Kingdom	464	515	480	459	-21	-4.4
Spain	420	400	439	469	30	6.8
Other Europe	338	456	493	497	4	0.9
of which:						
Poland	116	182	184	190	6	3.3
Croatia	57	135	135	119	-16	-11.9
Russian Federation	390	536	451	405	-46	-10.2
North America	2 253	2 305	2 307	2 125	-182	-7.9
Canada	150	150	150	150	0	0.0
United States	2 103	2 155	2 157	1 975	-182	-8.4

Sources: UNECE/FAO TIMBER database and CEPI, 2002.

Imports from outside the CEPI area represented nearly 11% of newsprint demand.

Within the graphic papers category, demand for uncoated mechanical paper grades fell by 3.2% to 4.7 million m.t., with imports, exports and internal deliveries all showing decreases. Growth in demand for coated mechanical grades fell back to their 1999 level, declining by 7.1% to 6.5 million m.t.. Demand for coated woodfree grades fell by 1 million m.t. or 10.2%. Internal deliveries of coated woodfree paper by CEPI producers to purchasers within CEPI countries decreased by 9.6%. Consumption of uncoated woodfree paper grades fell by 6.7%, although both imports and exports increased. Overall demand for coated grades fell by 8.8% and uncoated grades by 5.5%.

Consumption of packaging grades of paper and paperboard held up slightly better than graphic paper markets, decreasing by just 2.3% to 32.7 million m.t. Among the packaging grades, consumption of corrugated case materials decreased by 1.5%, carton board rose by 0.4%, wrappings fell by 4.7% and other paper and board for packaging dropped by 9.2% (to 3.2 million m.t.). Imports decreased by 1.9%.

TABLE 10.2.2

Consumption[1] of paper and paperboard in the UNECE region, 1998-2001

(1,000 m.t.)

	1998	1999	2000	2001	Change 2000 to 2001	
					Volume	%
EU/EFTA	73 267	78 199	82 456	79 178	-3 278	-4.0
of which:						
Germany	17 073	17 766	19 672	18 767	-905	-4.6
United Kingdom	11 413	11 871	12 907	12 560	-347	-2.7
France	10 743	10 955	11 946	11 365	-581	-4.9
Italy	9 592	10 461	11 075	10 735	-340	-3.1
Spain	5 462	8 047	6 826	6 402	-424	-6.2
Netherlands	3 894	4 164	4 105	3 826	-279	-6.8
Other Europe	8 595	8 962	10 212	9 783	-429	-4.2
of which:						
Poland	2 088	2 268	2 409	2 396	-13	-0.5
Turkey	2 075	2 142	2 756	2 016	-740	-26.9
Czech Republic	782	803	849	929	80	9.4
Slovakia	489	703	823	886	63	7.7
CIS	2 817	3 712	4 446	5 075	630	14.2
of which:						
Russian Federation	2 128	2 848	3 415	3 925	511	15.0
North America	98 738	104 240	102 804	97 831	-4 973	-4.8
Canada	6 871	8 370	9 118	9 132	14	0.2
United States	91 866	95 870	93 686	88 699	-4 987	-5.3

[1] Apparent consumption = production + imports – exports for those countries from the UNECE/FAO TIMBER database. However for those countries from the CEPI database, for this table and related analysis, consumption = domestic deliveries + imports.

Sources: UNECE/FAO TIMBER database and CEPI, 2002.

Exports increased by 11.5%, with exports particularly strong for case materials which increased by 31.1% (0.3 million m.t.).

Demand for sanitary and household grades grew by 3% to 5.6 million m.t., primarily the result of internal deliveries rising by 3.3%. Imports and exports, which both represent about 3% of consumption, fell. Exports declined by 5% and imports by 6.8%.

Despite a relatively disappointing contraction in production, in global terms the CEPI countries maintained their share of the world paper and paperboard output in 2001. Exports to countries outside the CEPI area increased by 2.8% to 10.5 million m.t., while imports into the area fell by 4.5% to 4.9 million m.t. This perhaps reflects some benefit to the euro currency countries of a favourable euro/dollar exchange rate in 2001. The proportion of total deliveries to outside the CEPI area increased to 11.9%. Exports to both North and South America fell back to 1999 levels but were offset by a resurgence of deliveries to Asian markets. In aggregate, 32% of exports went to Asia, 25% to the rest of Europe, 20% to North America, and the remainder to other world regions. Imports into the CEPI countries contributed 6% to total European paper and paperboard consumption in 2001. Imports from North America fell for the fourth consecutive year. Imports from Latin America recovered from last year's fall. Deliveries from the rest of Europe into CEPI countries, primarily from eastern Europe, rose by 9.9% to 2.1 million m.t., and now represent the highest level of imports from any region, accounting for 44% of CEPI imports while just 38% of imports came from North America in 2001.

The CEPI production figures for the first quarter of 2002, although showing a paper and paperboard output of 22.5 million m.t. for the quarter, were slightly lower than in the same period of 2001. However, the production volume was over 4% higher than in the final quarter of 2001, indicating a market upturn at least in the first quarter. A slow economic upturn, currently forecast for late 2002, should however benefit

European paper and paperboard markets hit by a real contraction of activity since the middle of 2001.

The outlook for paper and paperboard trade between Europe and the United States has been complicated by the prospect of increased import tariffs, as the European Commission (EC) formally proposed in 2002 a set of retaliatory tariffs against paper and paperboard products imported from the United States in response to tariffs on steel imports by the United States. The EC submitted a proposed tariff increase of 15% to the World Trade Organization (WTO) on a long list of paper and paperboard products imported from the United States. The EC list of paper and paperboard products subject to the proposed tariff increase was reportedly refined following EC consultation with the European Union's 15 member states. The list includes all uncoated paper products used for printing, writing and graphics applications, corrugated boxes, cartons, bags and other containers, tissue and sanitary paper products, and books, ledgers, business forms, albums and writing pads all subject to a proposed 15% tariff increase. The tariffs for all items on the EC list could be applied if the WTO rules that United States steel import tariffs are illegal and safeguard measures are not removed. In addition to the EC action, China too has proposed increased tariffs on imports of certain paper products from the United States, subject to ruling by WTO on the United States steel import tariffs. A WTO decision on this matter is not expected until possibly 2003.

10.2.2 *Paper and paperboard in North America*

Domestic purchases and production of paper and paperboard in the United States declined through 2000, 2001 and into 2002, dropping by more than 10% off the peak historical levels of 1999 (graph 10.2.2). By the first quarter of 2002 United States paper and paperboard production and consumption on an annual basis were both running about 11% below the peak volumes of 1999. Thus the recent downturn ranks among the most significant for United States paper and paperboard markets in the past 50 years, exceeded only by the downturn that occurred during the so-called energy crisis of the 1970s (when annual United States consumption dropped by 17% and production fell by 15% between 1973 and 1975). With domestic demand and production falling in 2001, industry-wide profits likewise fell to abysmal levels illustrated by the trend since 1995 in unadjusted after-tax quarterly profits for the entire United States paper and allied products industry (graph 10.2.3). Corresponding to the drop in demand and profits there were numerous mill closures in North America, and particularly in the United States where not less than 26 paper and paperboard

GRAPH 10.2.2

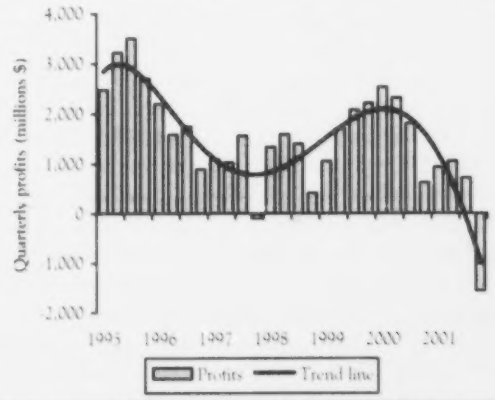
United States paper and paperboard purchases and production, 1996-2002

Source: American Forest & Paper Association, 2002.

mills were shut down in the year 2001. Dozens of paper machines were also shut down at other locations. Employment in the United States paper and allied trades sector dropped by 7.2% from 1999 to the first quarter of 2002, a loss of 48,000 jobs. However, industry profit data for the first quarter of 2002 suggest that a market rebound is underway. Significant questions are how the rebound will unfold and whether it can be sustained. The recent United States economic downturn was spawned by a steep rise in the exchange value of the United States dollar since 1996, leading to an expanded United States trade deficit in goods and ultimately a precipitous decline in United States industrial output.

GRAPH 10.2.3

United States paper & allied products industry after-tax profits, 1995-2001



Source: United States Department of Commerce, *Quarterly Financial Report*, 2002.

The abrupt decline in United States manufacturing, business growth and investment activity beginning in 2000 also precipitated a broad decline in domestic demand for printing, advertising, packaging and other business applications of paper and paperboard products. Thus, already facing weakness in exports and rising imports since 1996 with the stronger dollar, the United States paper industry encountered simultaneously a large drop off in domestic demand for paper and paperboard from 2000 through 2001. The Canadian industry, heavily dependent on exports to the United States, also experienced a sharp downturn of production and shipments in 2001.

Continued gradual upturn rather than dramatic recovery in United States business activity and in the United States pulp and paper sector appears more plausible in 2002 and 2003. The timing of proposed tariffs on paper and paperboard products (by the EC and China in response to United States steel import tariffs) could hardly be less propitious for the United States pulp and paper sector, which has been reeling from years of expanded trade deficits since 1996 under the weight of an exceptionally strong United States dollar. A weakening trend in the United States dollar exchange value since February of 2002 (according to the broad dollar indexes) provides some prospect for improvement in the United States trade balance, but that prospect could be dimmed in the future by trade barriers. Also looming over the United States economy is the threat of renewed terrorist attacks, emphasized by warnings from senior government officials that a new terrorist attack on the United States is very likely.

In the year 2001, paper and paperboard demand in North America dropped by around 5%, with a 5.2% decline in reported domestic purchases in the United States and a negligible decline in Canada. In the United States domestic purchases of paper and paperboard commodities (excluding building paper) fell from a record level of 93.8 million m.t. in 1999 to 91.7 million m.t. in 2000, and to 86.9 million m.t. in 2001 (based on data reported by the American Forest & Paper Association (AF&PA) *Paper, Paperboard & Wood Pulp, Monthly Statistical Summary*). Purchases data for the first quarter of 2002 indicate an annual rate of only 83.6 million m.t., a decline of roughly 11% from 1999 into 2002, although it can be noted that markets appeared to be turning upward in the second quarter of 2002. The decline in paper and paperboard demand stands in contrast with United States GDP growth which slowed down in recent years but nevertheless increased by 7% from 1999 to the first quarter of 2002. The decline in paper and paperboard demand reflects impacts of the recession in United States manufacturing and record United States trade deficits.

In the United States, production of paper and paperboard (including estimates for building paper) dropped in 2001 by 5.8%, from 86.5 to 81.5 million m.t., somewhat more than the 5.2% drop in United States domestic purchases of paper and paperboard (indicating further widening of the trade deficit in tonnage of paper and paperboard, although both imports and exports receded with the economic downturn in 2001). On an annual basis, United States production of paper and paperboard in 2001 was 8.2% lower than production in the peak year of 1999, and production in the first quarter of 2002 (running at an annual rate of around 78 million m.t.) was roughly 11% lower than the annual production rate of 1999. Mill closures and limited capacity growth contributed to a decline in United States paper and paperboard production capacity by 1.3% in 2001, but nevertheless capacity utilisation dropped from around 91% in 2000 to an average of about 87% in 2001, and reached a low point at around 80% in December of 2001 before recovering to levels above 85% in the first half of 2002.

Price trends for paper and paperboard commodities generally follow industry capacity utilisation trends, and thus prices were generally declining through the end of the year 2001, and then prices levelled off in the first half of 2002 and began to show signs of firmness with an upturn in spot prices for some grades. For example, spot prices for containerboard (kraft linerboard and semi-chemical corrugating medium) were falling through the year 2001 and into 2002, reaching a trough during February and March, but then turned upward from April through June of 2002 (see www.paperloop.com). Increases in list prices for containerboard grades were announced for June and July by a number of leading producers, but reported contract prices for containerboard remained unchanged in June (Pulp & Paper Week). Continued weakness in the printing and publishing sector delayed the market upturn for newsprint, although some producers announced price increases for newsprint in June. United States demand for newsprint reportedly increased in May for the first time on a year-to-year basis since January of 2000, although year-to-date North American newsprint production and shipments in 2002 were still down by 10% relative to 2001 (according to data from the Pulp and Paper Products Council of Canada). Prices for other printing paper grades such as the coated paper grades remained weak at mid-year 2002 but were no longer declining since the first quarter.

Although an upturn was observed in overall United States industrial production in 2002, the industrial output index of the large United States printing and publishing sector continued to recede into the first

quarter of 2002, down by 9.6% relative to the first quarter of 2001 (United States Federal Reserve Board, G.17 Report). In addition, mail volume data reported by the United States Postal Service showed declines over the past year, with notable declines in the volume of catalogues and periodicals such as magazines. However, indicators of business trends in commercial printing generally showed gradual improvement from the fall of 2001 into the first half of 2002. The Print Business Index of the National Association for Printing Leadership (NAPL) edged up in March and April of 2002 to levels indicating that business was finally picking up for the majority of commercial printers, for the first time since October 2000 (see www.napl.org). The print sector's recovery from recession paused as the index showed that business was not picking up for the majority of commercial printers in May, a further indication that the ongoing recovery will be gradual and at times halting. Nevertheless, print sector trends still pointed upward, and NAPL analysis indicated that commercial print sales could grow by 2.2% to 3.4% in 2002, mainly in the second half of the year, and by as much as 7.3% in 2003.

Among principal commodity groups, United States newsprint production was off by 13.5% in 2001, dropping from 6.7 million m.t. in 2000 to 5.8 million m.t. in 2001. Although newsprint demand is driven in large part by business advertising expenditures, which collapsed in 2001 along with business profits, it is noteworthy that surveys have also shown gradually declining newspaper readership and newspaper circulation in the United States, with declining per capita consumption of newsprint since the late 1980s. Shipments of other graphic papers (printing & writing papers excluding bristols and thin papers) dropped by 8.4%, from 23.0 million m.t. in 2000 to 21.1 million m.t. in 2001. Containerboard production (case materials) dropped by 4.9%, from 30.9 million m.t. in 2000 to 29.4 million m.t. in 2001, roughly in line with the drop in United States industrial production. Other categories of paper and paperboard used for packaging and other industrial applications dropped by 3.4%, from 17.6 million m.t. in 2000 to 17.0 million m.t. in 2001. Production increased only for sanitary and household paper products (tissue and sanitary paper), up by 1.5%, from 6.3 million m.t. in 2000 to 6.4 million m.t. in 2001. The decline in production of packaging grades and containerboard directly reflected the downturn in United States industrial production, while larger declines in newsprint and other graphic paper production reflected a larger drop in United States print advertising activity and lower demands for paper in business applications, associated with the broader downturn in business investment and business growth as well as the downturn in industrial production.

In 2001, the Canadian pulp and paper industry suffered the sharpest year-over-year drop in sales in almost two decades but still managed to post a small aggregate profit, due mostly to a weaker Canadian dollar. This summary of Canadian trends is drawn from The Canadian Pulp and Paper Industry: A Review and Outlook, Canadian Pulp and Paper Products Council (PPPC) [see www.pppc.org/en/1_0/index.html]. Canadian shipments of paper and paperboard dropped by 5.8% (from a record 20.8 million m.t. in 2000 to 19.6 million m.t. in 2001). The decline was primarily the result of weaker exports. A significant decrease in advertising expenditures in the United States led to a 7% decline in shipments of communication papers (newsprint and other graphic papers) to the United States. Domestic sales by Canadian producers to markets within Canada held up fairly well, decreasing by only 0.2% despite a slowing economy and a 4% increase in imports. With only fractional declines in capacity, the overall capacity utilisation rate for the Canadian pulp and paper industry declined by six percentage points to an average level of 89% in 2001. It was estimated by PPPC that the average United States dollar price paid for Canadian industry shipments (weighted by Canadian shipments) fell by almost 8% in 2001 when compared on average to prices in 2000. The decline in Canadian shipments combined with weaker prices resulted in a significant decline in overall industry profits. Preliminary estimates for 2001 put the industry's net earnings on pulp and paper operations at $800 million (Canadian dollars) compared to net earnings of $3.0 billion Canadian dollars in 2000.

The decline across the Canadian paper and paperboard sector extended to most major product lines. Canadian industry shipments of newsprint (to domestic and foreign markets) dropped by 9.8%, from 9.3 million m.t. in 2000 to 8.4 million m.t. in 2001. Other graphic paper (printing & writing paper) shipments dropped by 3.4%, from 6.3 to 6.1 million m.t., while shipments of packaging paper and paperboard dropped by 2.4%, from 4.5 to 4.4 million m.t. By the first quarter of 2002 it was recognized that the United States economy was slowly recovering from the recession in the United States manufacturing sector, and as a result PPPC projected a 2.3% increase in Canadian pulp and paper industry shipments in 2002.

10.2.3 *Paper and paperboard in the Russian Federation*

In 2000 and 2001, output of paper and paperboard products continued to increase in the Russian Federation, although in 2001 the growth in output was slower than in the year 2000. According to data from PPB Magazine and author estimates, annual rates of growth in Russian output for principal categories of paper and paperboard in 2001 were as follows (as compared to growth rates in the year 2000)[3]:

- total paper and paperboard – up by 5.1% (versus 14.6% in 2000)
- all paper grades (excluding paperboard) – up by 2.9% (versus 12.5% in 2000)
- newsprint only – up by 2.2% (versus 4.7% in 2000)
- all paperboard grades – up by 10.1% (versus 21.3% in 2000).

According to UNECE data reported in table 10.2.1, the largest increase was in output of packaging materials, which increased by 11.9% from 2.5 to 2.8 million m.t. Output of graphic papers in Russia increased by only 1.3%, at 2.3 million m.t. in 2001. Output of sanitary and household papers increased by 8.1%. Similar to Europe and North America, there was less robust demand for graphic papers than for other categories of paper and paperboard.

In the 2000 to 2001 period, most Russian forest, pulp and paper enterprises increased their output and raised their profitability. This was associated with their adaptation to market conditions and by structural reorganization of both individual enterprises and the industry as a whole.

Growth in Russian output of paper and paperboard continued also through the first four months of 2002. Total production of paper and paperboard in the period from January through April of 2002 was up by 6.4% relative to the same four-month period in the year 2001. During the same period paper output was up by 2.8% and paperboard output was up by 12.2%.

Important economic and political changes continued to unfold in Russia in 2000 and 2001, contributing to a certain degree of political stabilization and economic progress, all of which continued to have a positive influence on growth in the Russian pulp and paper sector. Tax reform was implemented, including unification of the individual income tax rate at 13%. The profit tax of industrial enterprises was drastically reduced by up to 24%. The rouble/dollar exchange rate experienced relatively minor adjustments in the 2000 – 2001 period, with the exchange rate hovering in the range of 26.5 to 28.5 roubles per dollar in the year 2000 and shifting to upwards of 30 roubles per dollar in 2001. The relatively low rouble exchange rate against major currencies continued to favour production of goods in Russia, including paper and paperboard, for both the domestic and export markets. The political and economic stability in Russia also helped encourage foreign investment, which increased above $14 billion in 2001.

Russia and other CIS countries experienced growth in per capita paper and paperboard consumption in recent years, after a temporary decline in the early 1990s. In 2001, consumption of paper and paperboard products reached 28 kilograms per capita in Russia. Consumption of paper and paperboard in Russia increased by 15%, from 3.4 million m.t. in 2000 to 3.9 million m.t. in 2001, with most of that increase provided by increased domestic production.

Russia and the other CIS countries showed particularly strong economic growth, for the third consecutive year. Thus, the increase in output of pulp and paper products continued in Russia (while at a slower rate compared to the previous year) against the background of the downturn in pulp and paper production in North America and western Europe.

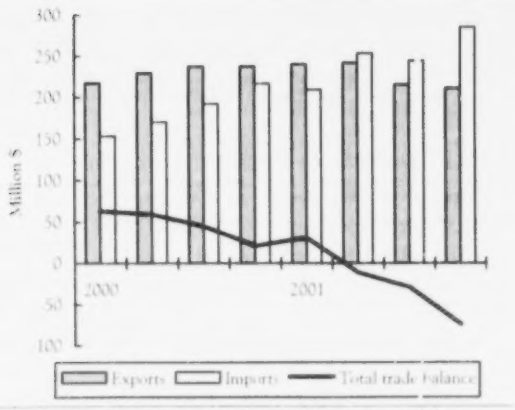
However, international trade and the value of Russian imports and exports continued to evolve along with shifting global prices for pulp and paper commodities. In general, global woodpulp prices fell more precipitously in 2001 than paper and paperboard prices. Since the second quarter of 2001 the Russian trade balance for paper and paperboard became negative, this process being intensified in the third and fourth quarters of 2001 (graph 10.2.4). This was largely due to expanded imports and slower growth in exports of the more expensive paper and paperboard grades and products, and it stands in contrast to the fact that Russian exports of pulp, paper and paperboard were increasing in total tonnage in 2000 and 2001. However, while the tonnage of Russian market pulp exports increased by 9.4% in 2001, global prices for market pulp were rapidly receding, offsetting the value of pulp exports. Global prices for paper and paperboard did not drop as much as market pulp prices in 2001, but the tonnage of Russian paper and paperboard exports increased by only 1.3% in 2001.

Restructuring of enterprise ownership was in progress in the Russian pulp and paper industry. For example,

[3]Data on paper and paperboard production reported to UNECE from the Russian Federation (shown in Table 10.2.1) show slightly lower rates of growth in Russian output, 5.4% in 2001 and 17.1% in 2000, but the trends are generally in agreement with author estimates discussed in the text.

GRAPH 10.2.4

Russia's pulp and paper exports and imports, 2000 and 2001



Sources: State Customs Committee, *PPB Express* and the author's data handling, 2002.

there was replacement of owners at several major enterprises such as OAO Volga, the Syktyvkar Forest Industrial Complex, and the Ust Ilimsk Forest Industrial Complex. In the summer of 2002 owners were also replaced at the Kotlas Pulp and Paper Mill. Russia's largest enterprises increased their use of biofuels for example, OAO Svetogorsk, the Arkhangelsk Pulp and Paper Mill, the Kotlas Pulp and Paper Mill.

One manifestation of the Russian industry's structural reorganization is the fact that it has become an export-oriented industry. The export share of Russian market pulp output was more than 83% in 2001, while the export share of Russian paper and paperboard output was 45%. Despite the fact that Russia's pulp and paper industry has not yet recovered to the historical peak output levels of the 1988 to 1989 period, Russia's export sales reached record historical levels in the 2000 to 2001 period. However, while primarily exporting less expensive kinds of products (newsprint, kraft liner and market pulp), Russia has simultaneously increased its imports of high value paper and paperboard products, notably clay-coated grades. This explains the overall negative trade balance for pulp, paper and paperboard in 2001.

Late in 2001 and continuing into the first half of 2002, a Russian Forestry Complex strategy continued to be worked out for the period up to 2015. The Forestry Complex strategy options were based on the current political stability in Russia, with high political ratings of Russian Federation President Vladimir Putin, on the strategic partnership with the United States connected to support for anti-terrorist operations after the events of 11 September 2001, as well as Russia obtaining broader recognition in 2002 as a country with a market-based economy. At the same time, economic and political cooperation with China was being developed, essentially in the framework of the Shanghai Organization for Cooperation.

The development strategy for Russia's pulp and paper industry in the period to 2015 is based on expectations of internal market growth (in particular expectations of rapid growth in consumption of information carriers for Internet and other information technologies as well as growth in packaging for food industries, etc.). The strategy is also based on assessment of potential foreign markets, primarily those of CIS countries, China, eastern Europe, India, and Pakistan. Consideration of key principles in the Forestry Complex strategy took place at the enlarged session of the State Council under the guidance of President Putin and at the session of the Government of the Russian Federation. Discussion of national interests underlined the need for abandoning the policy of roundwood export, which is viewed as forestalling development of more extended wood processing in the immediate vicinity of areas where timber is being grown in Russia.

It can be noted that the contribution of roundwood to total Russian wood product exports increased from 45% to 55% in the period from 1990-2000. It can also be recognized that Finland occupies first place among importers of Russia's roundwood and accounts for about one third of the total exports of Russia's roundwood. Over the last 10 to 20 years there was more than a two-fold increase in roundwood exports from Russia to Finland (from 4 to 6 million m^3 per year in 1982-1993 to 10-11 million m^3 per year in 1998-2000). Finland has roughly doubled its output of paper and paperboard within the same period.

A specific feature of Russia's pulp industry is its large proportion of sulphite pulp capacity and the need for environmental reconstruction of sulphite pulp mills. One of the key environmental problems is the necessity to unify approaches to environmental regulations in Russia and in western European countries. Step by step environmental reconstruction is still in progress at various Russian pulp and paper mills. The Saint Petersburg Goznak Paper Mill for example was a pioneer in holding an ISO 14000 certificate. Local treatment systems with KWI flotators were put into operation at the Neman Mill. The Vyborg Mill was converted to gas fuel.

Russia has yet to return to the peak historical pulp and paper production levels of the 1988 to 1989 period although annual production of newsprint and offset paper products have now exceeded their previous

historical levels. Russia has experienced steady expansion since 1997 in production of woodpulp, paper and paperboard products, and the expansion continued in 2000 and 2001. This continued expansion of production in Russia occurred at a period when production declined in most of western Europe and North America.

Looking to the future, the main problem recognized within the Forestry Industrial Complex of Russia as a whole (and within various Federal Areas, such as the North-Western Federal Area) is inadequate in-depth wood processing in the immediate areas where wood is growing. Wood raw material (roundwood) dominates the exports of forest-based products. This results in a loss of significant amount of jobs, in reduced currency earnings, slowed economic growth of the country as well as in negative environmental impacts because of increased transportation costs, or lack of complex use of forest resources. Because of this, the development of complex in-depth wood processing at an accelerated pace (including the pulp and paper industry) is considered by Russian authorities as a foundation strategy.

A more favourable investment climate is being created in certain areas of Russia, such as the North-Western Region, and in particular the Leningrad Oblast area. The Region has the capability to provide scientific and staff support to investment programs. A number of enterprises located in the area (for example the OAO Svetogorsk, the Goznak Paper Mill) have had their production certified to comply with the ISO 9000 International Standards System. Late in 2001, as mentioned above, the Saint Petersburg Goznak Paper Mill became the first enterprise of the Russian Forestry Complex to receive the certificate of the Environmental Management System in accordance with the ISO 14000 international standards.

In 2001 and 2002, a number of UNECE projects aimed at development of Russia's forestry sector were continuing. Three scientific and practical conferences were held in Saint Petersburg devoted to: "Sustainable Development and Certification in the Forestry Complex", "Sustainable Development and Biofuel Use", and "Strategy of Forestry Complex Development in Russia's North-Western Area.

10.3 Woodpulp

In 2001, woodpulp production receded in most of Europe and in North America, with a drop of 3.7% by 1.5 million m.t. in Europe as a whole and a drop of 7.8% by 6.1 million m.t. in North America (United States and Canada), (table 10.3.1). For European countries as a whole, the drop of woodpulp production in 2001 was a decline from recent record production levels in the year 2000, whereas peak North American production levels had occurred a number of years earlier in the 1990s. In the United States, woodpulp production and pulpwood receipts at woodpulp mills have been receding since their historical peaks in the mid-1990s, and by 2001 both were more than 10% below the historical peaks.

10.3.1 Woodpulp in Europe

Output of woodpulp in Europe fell in 2001, according to data reported by CEPI. Total production, of both integrated and market pulp, reached 37.9 million m.t. among CEPI member countries, a decrease of 3.6% relative to 2000 production levels. Production at integrated mills fell by 4.7%, while output of market pulp declined by 0.8%. The drop in chemical pulp output was 1.7%, while production of mechanical and semi-chemical pulp declined by 4.1%. The operating rate (capacity utilisation rate) in the pulp industry fell from 92% in 2000 to 87% in 2001.

Overall consumption of woodpulp in the CEPI area (including consumption at integrated mills, market pulp, and imports) fell to 43.9 million m.t. by 4.1%. Exports, at 1.4 million m.t. in 2001, increased significantly by 47.4%, while imports, at 7.8 million m.t., declined by 1.4%. Consumption of mechanical and semi-chemical pulp decreased by 3.6% to 14.1 million m.t. Consumption of chemical pulp was 28.9 million m.t., down by 3.3%. Consumption of recovered paper continued to increase according to data for the CEPI area. Utilisation was up by 0.8% at 42 million m.t. Apparent collection also increased, by 1.8%, to 44.7 million m.t. Recovered paper (recycled fibre) represents 50% of the European paper industry consumption of fibres.

Recovered paper markets in Europe began to show signs of a fairly strong market rebound in the second quarter of 2002, after more than a year of relatively weak markets, according to the second quarter recovered paper market report issued by the Bureau of International Recycling (BIR) in Brussels. There were broad increases reported in prices for recovered paper commodities during the second quarter in most European countries. The firming up of recovered paper markets was reportedly due to increased production levels at European paper and paperboard mills coupled with increased demand for export of recovered paper to Asia.

10.3.2 Woodpulp in North America

For Canadian woodpulp producers, the only notably positive market development was a substantial rebound in market pulp shipments to China

TABLE 10.3.1

Production of woodpulp in the UNECE region, 1998-2001

(1,000 m.t.)

	1998	1999	2000	2001	Change 2000 to 2001	
					Volume	%
MECHANICAL WOODPULP						
EU/EFTA	12 655	12 436	14 190	13 572	-618	-4.4
of which:						
Finland	4 137	4 102	4 819	4 621	-198	-4.1
Sweden	3 026	3 029	3 566	3 346	-220	-6.2
Norway	1 664	1 644	1 761	1 735	-25	-1.4
Other Europe	330	342	390	392	1	0.4
of which:						
Poland	113	126	103	100	-3	-2.9
Czech Republic	79	62	68	88	20	29.4
Russian Federation	981	1 129	1 196	1 590	394	32.9
North America	15 772	16 331	17 486	15 912	-1 574	-9.0
Canada	10 481	11 222	12 340	11 409	-931	-7.5
United States	5 291	5 109	5 146	4 503	-643	-12.5
CHEMICAL WOODPULP[1]						
EU/EFTA	23 472	23 600	24 004	23 158	-846	-3.5
of which:						
Sweden	7 523	7 664	7 951	7 654	-297	-3.7
Finland	7 310	7 567	7 102	6 548	-554	-7.8
Portugal	1 708	1 755	1 774	1 806	32	1.8
France	1 913	1 817	1 698	1 615	-83	-4.9
Spain	1 545	1 617	1 623	1 589	-34	-2.1
Other Europe	2 460	2 551	2 885	2 902	18	0.6
of which:						
Poland	841	786	891	873	-18	-2.0
Slovakia	339	551	603	668	65	10.8
Czech Republic	490	504	569	596	27	4.7
Russian Federation	3 010	3 980	4 646	4 811	165	3.6
North America	67 596	67 413	67 040	62 500	-4 541	-6.8
Canada	13 363	14 160	14 356	13 376	-980	-6.8
United States	54 233	53 253	52 684	49 124	-3 561	-6.8

[1] Including semi-chemical woodpulp and dissolving grades

Sources: UNECE/FAO TIMBER database and CEPI, 2002.

(increasing by 47% in 2001 relative to 2000). Overall woodpulp exports from Canada declined by 5.4%, from 10.8 million m.t. in 2000 to 10.3 million m.t. in 2001. Capacity utilisation rates for market pulp producers in Canada dropped from an average of 95% in 2000 to 89% in 2001. Spot prices for northern bleached softwood kraft (sulphate) pulp in North American and global markets declined through the year 2001, reaching a trough in the market around February and March of 2002, having dropped at that point by roughly 35 to 40% or nearly $250 per m.t. from previous peak levels late in the year 2000. Subsequently however, from April to June of 2002, spot prices for market pulp had rebounded by 15% or more (by $30 to $50 per m.t.).

Woodpulp production in the United States (including production for paper and paperboard at integrated pulping and papermaking facilities plus market pulp and estimated dissolving pulp production) receded from 57.9 million m.t. in 2000 to 53.7 million m.t. in 2001, and during the first quarter of 2002 production was running at an annual rate of only about 51 million m.t. United States production of market pulp for paper products (excluding dissolving pulp) dropped from 7.9 million m.t. in 2000 to 7.4 million m.t. in 2001 (AF&PA, Paper, Paperboard & Wood Pulp, Monthly Statistical Summary). United States imports and exports of market pulp changed very little between 2000 and 2001, indicating that most of the drop in market pulp shipments in 2001 was associated with a drop in domestic fibre demands, with total consumption of woodpulp dropping by just over 4 million m.t. in the United States.

As was the case for northern bleached softwood kraft pulp, North American spot prices for bleached hardwood kraft and southern bleached softwood kraft pulp receded in the year 2001, reaching a trough in February and March of 2002, before rebounding in April and May. Global spot prices for market pulp (including commodities such as radiata pine pulp, Eucalyptus pulp, and mixed hardwood pulp in Asia) exhibited a similar trend, reaching low points around February and March of 2002 before rebounding in April and May. By May of 2002, many North American producers had announced increases in list prices for market pulp, pushing list prices for bleached kraft pulps to a range of around $460 to $500 per m.t. in June, after prices had fallen to lows of $400 to $460 per m.t. late in the year 2001. The fact that list prices had been in a range of $650 to $700 in the second half of 2000 gives an indication of the severity of the downturn in market pulp prices that occurred in 2001.

Prices for some recovered paper commodities also began to increase in the first half of 2002, particularly old corrugated containers (OCC) used primarily at paperboard mills. By mid-year 2002, the reported United States average prices for OCC had more than doubled relative to prices in the first quarter (Pulp & Paper Week), reflecting growth in overseas demands for recycled fibre and a modest upturn in domestic paperboard production. A number of new paper and paperboard mills began operation recently in Asia, and more were scheduled to begin operation in the near future (particularly in China). Included among new Asian mills are some of the largest and fastest paper machines in the world. Many of the new Asian mills are operating on the basis of imported market pulp (in the case of paper mills) but many others are operating on the basis of recycled fibre (often imported fibre in the case of paperboard mills). Although much of the imported market pulp for Asian mills comes from sources in proximity to Asian markets, such as hardwood pulp from mills in Indonesia or softwood pulp from mills in Russia, growing fibre demands in Asia create growing demands for recovered paper directly from North America and Europe. Fibre demands in Asia began to recover in 2002, leading to an upturn in export prices for some categories of recovered paper, particularly OCC. In general however, recovered paper prices in North America were still well below preceding peak levels of 2000, having generally receded from 2000 into 2001. Prices for old newspapers and pulp substitute grades of recovered paper remained weak by mid-year 2002 due to continued weakness in newsprint and printing paper markets.

10.3.3 *Woodpulp in the Russian Federation*

In 2000 and 2001 the output of woodpulp continued to increase in the Russian Federation, although growth was slower in 2001 than in 2000. According to data from PPB Magazine and author estimates, annual rates of growth in output for principal categories of woodpulp in 2001 were as follows (compared to growth in the year 2000)*:

- all woodpulp – up by 6.3% (in 2000 – up by 17.4%);
- market pulp – up by 5.8% (in 2000 – up by 16.2%).

Growth in Russian output of woodpulp continued also through the first four months of 2002 (with output of market pulp increasing by 7.2% during that period relative to the same four-month period in 2001). In 2001 a record level of market pulp exports was achieved, equal to 1.8 million m.t. (an increase of 9.4% over the previous year).

The structure of Russian pulp exports continued to change. China became the dominant destination for Russian market pulp exports. China's share approximated half of total Russian market pulp exports in 2001. Expansion of paper mill capacity continues in China, much of it based on purchased market pulp.

In terms of total woodpulp production in Russia, mechanical woodpulp accounted for just one fourth of

* Data on woodpulp production reported to UNECE from the Russian Federation (shown in Table 10.3.1) show somewhat higher rates of growth in Russian output of woodpulp in 2001, 9.6%, but lower growth in 2000, at 14.4%, but the UNECE data and author estimates are in agreement that Russian output of woodpulp increased by a total of 24% over the two-year period of 2000 and 2001.

total woodpulp production in 2001 and chemical woodpulp grades accounted for three fourths of output. However, more than two thirds of the increase in Russian woodpulp production was mechanical woodpulp.

10.4 UNECE paper, paperboard and woodpulp trade flows

10.4.1 Paper and paperboard trade flows

Roughly three quarters of the world trade flows of paper occur with and within the UNECE region. Within the EU/EFTA subregion, 42.1% of global paper trade flows occurred based on a 1997 to 2000 average, compared to 15.2% within North America for the same period (table 10.4.1). The dynamics of these two large trading subregions display the same trends from 1998 to 2000, with intra North American trade rising and intra EU/EFTA subregion trade falling (graph 10.4.1).

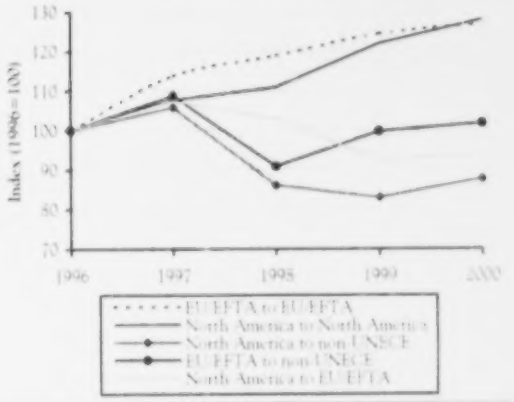
Trends in paper and paperboard trade flows show that North American exports to non-UNECE region countries (e.g. Asia) were the trade flows most significantly affected during the recent period of exceptional shifts in currency values, from 1996 to 2000. There were big downward shifts in trade flows from North America to non-UNECE regions, chiefly Asia, and also from North America to the EU/EFTA region. These downward shifts in trade reflect the decline in North American exports to Asia during the Asian financial crisis in 1997, and also a decline in exports from North America to Europe. Later in 1999 and 2000 the large paper and woodpulp trade flows within EU/EFTA also began to decline, with significant expansion of domestic production in countries like Germany. Meanwhile trade flows from EU/EFTA to non-UNECE region countries and trade flows within North America changed relatively little during the period from 1996 to 2000 (although Canadian exports to the United States dropped in 2001).

10.4.2 Woodpulp trade flows

The trade flows of wood pulp follow the same patterns of trade as for paper and paperboard for the 1996 to 2000 period, and for the same basic reasons (graph 10.4.2 and table 10.4.2). The UNECE region accounts for approximately 76% of the world's woodpulp trade flows. Within the EU/EFTA subregion, 19.9% of the global trade occurs, based on the 1997 to 2000 average. Within North America, the percent of world trade is 14.2%. Trade between subregions, as percent of global trade, varies from 19.5% for North America to non-UNECE region countries to 1.6% for EU/EFTA countries to non-UNECE countries.

GRAPH 10.4.1

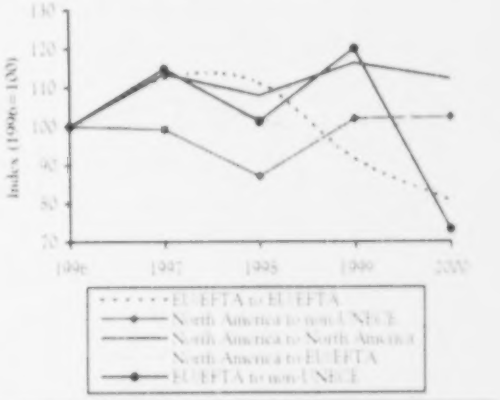
Major industrial paper trade flows in the UNECE region, 1996-2000



Source: UN COMTRADE/EFI, 2002

GRAPH 10.4.2

Major industrial woodpulp trade flows in the UNECE region, 1996-2000



Source: UN COMTRADE/EFI, 2002

TABLE 10.4.1

Major paper trade flows, by major countries, average 1997-2000

(% of global trade)

To:		From: EU/EFTA										Other Europe		CIS		North America			Non-UNECE						Grand total
		FIN	SWE	DEU	FRA	AUT	NLD	ITA	GBR	NOR	Total	POL	Total	RUS	Total	CAN	USA	Total	KOR	IDN	JAP	CHN	BRA	Total	
EU/EFTA	Germany	2.2	2.0		1.1	1.0	0.7	0.4	0.3	0.4	9.3	0.1	0.4	0.2	0.2	0.1	0.3	0.4						0.1	10.4
	United Kingdom	1.8	1.7	1.1	0.7	0.2	0.3	0.2		0.5	7.0		0.1	0.1	0.1	0.4	0.3	0.7						0.2	8.1
	France	0.8	0.6	1.5		0.3	0.5	0.5	0.3	0.1	6.2		0.1			0.1	0.1	0.2						0.1	6.6
	Italy	0.4	0.6	0.8	0.6	0.4	0.1			0.1	3.4	0.1	0.3			0.1	0.3	0.4						0.1	4.3
	Netherlands	0.6	0.8	0.9	0.3	0.2			0.2	0.1	3.6						0.3	0.3							4.0
	Spain	0.8	0.4	0.4	0.6	0.1		0.2	0.1	0.1	3.1		0.1				0.2	0.3						0.1	3.6
	Belgium	0.4	0.1	0.3	0.2		0.2		0.1		1.4							0.1							1.6
	Switzerland	0.2	0.1	0.4	0.1	0.1					1.1														1.2
	Denmark	0.3	0.5	0.2						0.1	1.2														1.2
	Austria	0.1	0.1	0.4	0.1						1.0		0.1												1.1
	Total	8.7	7.8	6.6	4.1	2.5	2.2	1.6	1.6	1.6	42.1	0.4	1.3	0.6	0.6	1.0	1.7	2.7		0.2			0.2	0.7	47.5
Other Europe	Poland	0.2	0.1	0.4		0.1					0.9		0.1												1.1
	Turkey	0.1	0.1	0.1		0.1					0.6		0.1	0.2	0.2			0.1							1.0
	Israel		0.1								0.3						0.1	0.2							0.6
	Total	0.7	0.5	1.0	0.2	0.5	0.1	0.2	0.1		3.4	0.1	0.9	0.4	0.5	0.1	0.2	0.3						0.1	5.1
CIS	Russian Federation	0.1									0.2				0.1										0.3
	Total	0.2									0.3		0.1	0.3	0.4										0.8
North America	USA	0.8	0.1	0.4	0.1		0.1	0.1	0.1	0.2	2.1			0.1	0.1	13.1		13.1	0.3	0.1	0.2		0.1	1.0	16.3
	Canada	0.1									0.3						2.2	2.2							2.5
	Total	0.9	0.2	0.4	0.1	0.1	0.1	0.1	0.2	0.2	2.3			0.1	0.1	13.1	2.2	15.2	0.3	0.1	0.2		0.1	1.1	18.7
Non-UNECE	China	0.1	0.1	0.1							0.4			0.2	0.2	0.1	0.6	0.7	0.7	0.5	0.3	0.7		2.9	4.2
	Hong Kong	0.1		0.1							0.4					0.2	0.5	0.7	0.8	0.4	0.4	0.2		2.5	3.6
	Japan	0.2									0.3					0.3	0.9	1.1		0.1		0.1		0.2	1.7
	Mexico										0.1						1.2	1.2							1.4
	Australia	0.2		0.1				0.1			0.6						0.2	0.2	0.1	0.1				0.5	1.3
	Malaysia										0.2					0.1	0.1	0.2	0.1	0.2	0.1			0.7	1.1
	Brazil	0.1		0.1							0.3					0.3	0.2	0.5						0.1	0.9
	Total	1.8	1.1	1.0	0.5	0.3	0.3	0.3	0.4	0.2	6.3	0.1	0.4	0.8	0.8	2.0	6.4	8.4	2.4	2.2	1.4	1.1	0.8	12.1	28.0
Grand total		12.2	9.5	9.1	4.8	3.4	2.6	2.3	2.2	2.1	54.4	0.7	2.7	2.1	2.3	16.2	10.5	26.7	2.8	2.5	1.7	1.1	1.0	13.9	100.0

Note: AUT = Austria, BEL = Belgium, BRA = Brazil, CAN = Canada, CHE = Switzerland, CHL = Chile, CHN = China, CZE = Czech Republic, DEU = Germany, ESP = Spain, EST = Estonia, FIN = Finland, FRA = France, GAB = Gabon, GBR = United Kingdom, HRV = Croatia, HUN = Hungary, IDN = Indonesia, ITA = Italia, JAP = Japan, KOR = Republic of South Korea, LVA = Latvia, MAL = Malaysia, MEX = Mexico, MYS = Malaysia, NLD = Netherlands, NOR = Norway, NZL = New Zealand, PNG = Papua New Guinea, POL = Poland, P.o.C = Province of China, PRT = Portugal, RUS = Russian Federation, SVK = Slovakia, SWE = Sweden, THA = Thailand, USA = United States, ZAF = South Africa.

Source: UN COMTRADE/EFI, 2002.

TABLE 10.4.2

Major woodpulp trade flows in UNECE region 1997-2000

(% of global trade)

To:		From: EU/EFTA									Other Europe		CIS		North America			Non-UNECE						Grand total
		SWE	FIN	PRT	ESP	NOR	FRA	DEU	NLD	Total	CZE	Total	RUS	Total	CAN	USA	Total	BRA	CHL	IDN	ZAF	NZL	Total	
EU/EFTA	Germany	1.7	2.0	0.5	0.6	0.4	0.2		0.9	6.5	0.1	0.3	0.1	0.1	2.1	0.9	3.0	0.4	0.1		0.1		0.7	10.6
	Italy	0.3	0.3	0.1	0.4	0.1	0.4	0.3		2.6	0.1	0.3	0.2	0.2	1.9	1.7	3.6	0.5	0.5	0.2	0.1		1.5	8.4
	France	0.4	0.3	0.4	0.2	0.3			0.2	2.4	0.1	0.1			0.9	0.8	1.7	0.4	0.2		0.1		1.0	5.1
	United Kingdom	0.3	0.7	0.3	0.3	0.2				1.8			0.1	0.1	0.9	0.8	1.6	0.6	0.1		0.2		0.9	4.5
	Netherlands	0.5	0.2	0.6	0.2	0.1				1.9					0.6	0.6	1.2	0.1	0.1	0.2			0.5	3.6
	Spain	0.1	0.1	0.4			0.3			0.9					0.2	0.2	0.5		0.1				0.2	1.6
	Austria	0.2		0.1	0.1			0.1	0.1	0.9		0.2			0.2		0.2	0.1			0.2		0.3	1.5
	Switzerland	0.1	0.1		0.1			0.1		0.6			0.2	0.2	0.2		0.2	0.1	0.1				0.2	1.3
	Sweden		0.2	0.2	0.1	0.2				0.7						0.1	0.1							0.8
	Finland									0.1					0.1		0.1							0.3
	Total	4.1	4.3	2.7	2.0	1.4	1.1	0.8	1.0	19.9	0.4	1.0	1.1	1.1	8.1	5.6	13.7	3.5	2.1	0.6	0.7		7.7	43.4
Other Europe	Turkey									0.1			0.1	0.1		0.2	0.2							0.6
	Total	0.3	0.2	0.1				0.2		1.1	0.3	0.5	1.0	1.0	0.1	0.4	0.5	0.1					0.3	3.4
CIS	Russian Federation									0.1														0.1
	Total									0.1			0.1	0.1										0.3
North America	USA									0.2					13.6		13.6	2.0	0.1		0.2	0.1	2.6	16.4
	Canada															0.6	0.6							0.6
	Total									0.2					13.6	0.6	14.2	2.0	0.1		0.2	0.1	2.6	17.0
Non-UNECE	Japan	0.1		0.1						0.3					3.8	2.1	5.9	1.2	0.4	0.2	0.1	0.6	2.5	8.7
	China		0.1							0.2			1.0	1.0	1.8	0.6	2.4	0.3	0.5	1.6		0.1	2.9	6.6
	Republic of South Korea									0.1			0.2	0.2	1.7	1.4	3.1	0.4	0.3	0.6	0.1	0.2	2.0	5.3
	Brazil														0.1	0.4	0.5		0.1				0.4	0.9
	Total	0.6	0.3	0.2	0.1	0.1	0.1	0.1		1.6			1.3	1.4	10.2	9.3	19.5	2.6	2.8	3.3	1.2	1.8	13.3	35.9
Grand total		5.0	4.9	3.0	2.2	1.6	1.3	1.2	1.0	23.0	0.7	1.6	3.6	3.6	32.0	15.9	47.9	8.2	5.1	4.1	2.2	1.9	23.9	100.0

Note: AUT = Austria, BEL = Belgium, BRA = Brazil, CAN = Canada, CHE = Switzerland, CHL = Chile, CHN = China, CZE = Czech Republic, DEU = Germany, ESP = Spain, EST = Estonia, FIN = Finland, FRA = France, GAB = Gabon, GBR = United Kingdom, HRV = Croatia, HUN = Hungary, IDN = Indonesia, ITA = Italy, JAP = japan, KOR = Republic of South Korea, LVA = Latvia, MAL = Malaysia, MEX = Mexico, MYS = Malaysia, NLD = Netherlands, NOR = Norway, NZL = New Zealand, PNG = Papua New Guinea, POL = Poland, PROC = Province of China, PRT = Portugal, RUS = Russian Federation, SVK = Slovakia, SWE = Sweden, THA = Thailand, USA = United States, ZAF = South Africa.

Source: UN COMTRADE/EH, 2002.

10.5 Conclusion

By the first half of 2002, the United States dollar began to weaken, and the United States economy began to recover. Real United States GDP increased in the first quarter of 2002 by 1.5% (at a seasonally adjusted annual rate of 6.1 percent), eclipsing growth of the entire preceding year as business activity was ramping up in anticipation of a broader economic recovery. Growth however is expected to be slower during the remainder of the year. In Europe, North America and globally, pulp, paper and paperboard spot prices were firming up and beginning to recover from cyclical lows, which appear to have been reached in the first quarter of 2002. Given that the recent downturn in pulp and paper markets was spawned by a decline in industrial production, and as it will take some time before historical average levels of industrial capacity utilisation, business investment, and exchange rates are reached, it is logical to assume that the ongoing recovery will continue to unfold gradually through the year 2002 and into 2003, barring any unforeseen or dramatic events in world affairs.

Prospects for growth in the pulp and paper sectors of Europe, North America and Russia continue to hinge in the short run upon trends in currency exchange values, particularly trends in the dollar/euro exchange rate and the rouble/dollar and rouble/euro exchange rates, as well as trends in overall manufacturing and trends in overall GDP growth.

Also complicating the outlook for paper and paperboard markets is the prospect of increased tariffs, notably the potential for EC countries to impose import tariffs on a broad array of paper and paperboard products from the United States in response to the imposition of tariffs on steel imports by the United States.

10.6 References

American Forest & Paper Association, *Paper, Paperboard & Wood Pulp, Monthly Statistical Summary*, 2002.

International Wood Fibre Report

Paperloop, www.paperloop.com, 2002.

PPB Express, various issues, 2002.

Pulp and Paper Products Council, Canada

Pulp & Paper Week, various issues, 2002.

The Canadian Pulp and Paper Industry: A Review and Outlook, Canadian Pulp and Paper Products Council, 2002.

Chapter 11
Markets for certified forest products[1]

Highlights

- The area of certified forests in the world has grown considerably over the last year, reaching about 124 million hectares by mid 2002, mainly driven by the Pan European Forest Certification (PEFC) and the Sustainable Forestry Initiative in the United States.
- The potential supply of certified forest products (CFPs) has grown in parallel with area certified and is estimated at 234 million m^3 annually worldwide.
- A minor part of the wood supplied from certified forests is actually traded as (labelled) CFPs, *inter alia*, owing to a lack of chain of custody certificates and low customer and consumer awareness and demand.
- Today only about 2,600 chain of custody certificates exist, mainly in Europe and North America, and issued almost exclusively by the Forest Stewardship Council (FSC).
- Existing markets for CFPs continue to be mainly located in western Europe, especially the United Kingdom, Germany and the Netherlands, and the United States.
- FSC-certified CFPs are today available across a large range of forest products in the more advanced markets, and PEFC certified CFPs are slowly becoming more visible.
- The CFP market continues to grow exponentially with CFP market share of total wood consumption (paper excluded) estimated at 10% in the United Kingdom, 7% in the Netherlands and 1% or less in Germany. This strong growth is expected to continue across a wide range of product categories, including paper.
- Consumer awareness of CFPs continues to be low, even in the more advanced markets in western Europe, which is seen as one main impeding factor for market growth.
- Public procurement is an important driver of demand in several key importing countries, including the United Kingdom, the Netherlands and Germany, and is expected to remain so, *inter alia*, owing to the illegal logging issue.

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Secretariat introduction

Certified forest products markets continue to be an exciting facet of the forest sector, generating considerable attention by retailers as well as suppliers. The concern for assurance of sourcing forest products, both wood and paper, from sustainably managed forests also has an impact on the rest of the supply chain. Final consumers are slowly becoming aware of the issue of sustainable forest management, partly through the certification message. Certification currently appears to be a communication tool to bring the message about the region's sustainable forest management from producers to consumers.

The UNECE Timber Committee has a mandate to follow the markets for certified forest products and the FAO European Forestry Commission follows developments in certification of sustainable forest management. This chapter focuses on the market aspect. At its annual market discussions, the Committee discusses certified forest products.

Readers are alerted that the basis of information in this chapter is not the UNECE and FAO TIMBER database built on country-supplied statistics as in the previous chapters. Unfortunately no official statistics exist on certified forest products because they are not currently recognized in customs classification codes. Instead the analysis in the chapter has for its foundation a survey of the officially nominated country correspondents on certified forest products and certification of sustainable forest management. The UNECE Timber Committee and the FAO European Forestry Commission established this informal network of correspondents in 2001 to provide a neutral source of information. Unless otherwise attributed, all estimations in this chapter are from these correspondents' responses to the survey. We express our appreciation to all those country correspondents who replied on time to the survey. Further information from these correspondents, for example on forest certification, will be published by September 2002 in an update of a *Geneva Timber and Forest Discussion Paper*[2] on the status of certification of sustainable forest management in the UNECE region.

In addition to the correspondents' information, interviews with Global Forest and Trade Networks, certification schemes, auditing bodies, and with some of the major retailers of certified forest products, were conducted by the chapter author, Dr. Ewald Rametsteiner, Expert on Certified Forest Products Markets, from the Institute of Forest Sector Policy and Economics, Vienna, Austria, along with his assistant, Mr. Florian Kraxner, also from the Institute of Forest Sector Policy and Economics, Vienna. In total, about 55 experts across the UNECE region have contributed with information on CFP markets. We sincerely thank these experts for their valuable contributions. To these sources of information, Dr. Rametsteiner adds his expertise on the subject.

The secretariat once again thanks Dr. Rametsteiner for his up-to-date and informative analysis of the markets for certified forest products. He has contributed to the above-mentioned *Discussion Paper* series on certification and he also wrote *Sustainable Forest Management Certification*, which was published by the Liaison Unit, Vienna, of the Ministerial Conference on the Protection of Forests in Europe, where he also works.

11.1 Introduction

Certified forest product (CFP) markets have been analysed in a regular chapter in the *Review* since 1998. The Timber Committee considers CFPs an increasingly important area to cover in its market discussions and this background analysis. The discussion in the *Review* will concentrate on the market and trade aspects for CFPs. Non-independently certified forests or CFPs and process certification schemes such as ISO 14001 are not included, as these do not generally lead to certified forest products.

11.2 What are CFPs?

Certified forest products bear labels demonstrating in a verifiable manner by independent bodies that they come from forests that meet standards for sustainable forest management. Consumers might find labels on furniture and wood products, while manufacturers could verify the source of certified products from a system of chain of custody that identifies the origin of the wood.

11.3 Supply of CFPs

11.3.1 Forest area certified

By mid-2002 the total area of forests certified[3] worldwide is about 124 million hectares or about 3.2 %

[2] *In preparation*, "Forest certification update for the UNECE region, summer 2002" by Ms. Jenni Raunesalo, Dr. Eric Hansen, Dr. Heikki Juslin and Mr. Keith Forsyth. UNECE/FAO *Geneva Timber and Forest Discussion Paper*. ECE/TIM/DP/25, 2002, and on the UNECE Timber Committee website at: www.unece.org/trade/timber/docs/certification/

of the worlds forests. The last two years have seen an exponential increase of forest area certified[3] according to different third party certification systems, including the Forest Stewardship Council (FSC), the Pan European Certification System (PEFC) in Europe and the Sustainable Forestry Initiative (SFI) in North America, as well as the Canadian Standards Association (CSA) system. Recently the American Tree Farm System (ATFS) in the United States has started third party audits. Today, those forest certification systems dominate the international market for forest certification. The Dutch Keurhout system is a major player in tropical forest approval, having a further 1.9 million hectares of forests approved additional to those already certified by others (Atyi and Simula 2002).

A tremendous increase in the total area of forests certified has occurred since 2000 as a result of the entrance of new third party certification programmes that certify large areas of forests either due to regional certification approaches, such as the PEFC, or industrial forest certification, such as the SFI programme (graph 11.3.1). FSC scheme's current market share is 23%, falling behind PEFC (34%) and SFI (26%). Please note that the graph contains overlaps owing to double certification, e.g. in the United States (0.4 million hectares SFI and FSC), Canada (0.63 million hectares SFI and CSA) and small areas in Europe, e.g. 10,000 hectares in Switzerland (FSC and PEFC/Q-Label).

The existing certification schemes expect further growth of certified forest areas in the coming year. In addition, several other schemes outside of the UNECE region have just started operational certification, such as the Malaysian Timber Certification Scheme or have certified small areas, such as the United States Green Tag Forestry. Other schemes are being established, for example in Indonesia, Brazil and Ghana. The Brazilian scheme, CERFLOR, has finalized its standard for plantations and is expected to become operational in 2002. In Canada preparations are under way to set up a system for small woodlot owners similar to the ATFS in the United States. Several of these schemes will add to the area of certified forests in 2002 and beyond.

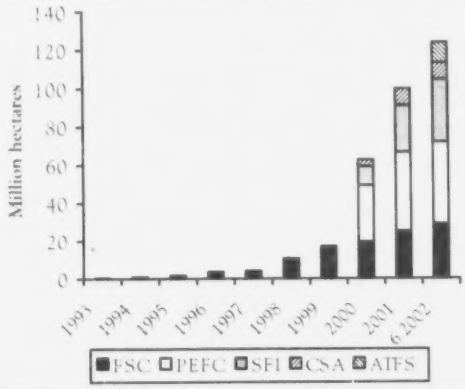
Geographically, more than 90% of the total area certified is in the northern hemisphere, with half of the certified forest area located in Europe and 41% in North America. Developing countries account for less than 10% of the total forest area certified. The largest areas are in Brazil (1.12 million hectares FSC certified, 61% of which plantations), Congo (1.15 million hectares Keurhout approved), Bolivia (0.9 million hectares, FSC) and South Africa (0.81 million hectares FSC certified, 100% plantations). This imbalance between developed and developing countries has changed rapidly in the last two years with the emergence of new certification systems in Europe and North America. In 1996 the share of developing countries in the total was approximately 70%.

Forest certification up to now has clearly favoured large-scale industrial forest holdings. The majority of certified forest area is industrial forests, especially in the FSC system and the SFI programme. However, in both the United States and in western Europe more than half of the wood supply comes from non-industrial forest holdings. The PEFC system and the ATFS, as well as a planned Canadian woodlot owner system, (by 2003) are mainly targeting small-scale forest holdings and non-industrial forest holdings.

The United States and Finland are leaders in terms of forest area certified (graph 11.3.2). Since last year the situation became more balanced between the two continents, with further dramatic growth of the potential volume of CFPs. In Europe around 35% of the existing forest area[4] is already certified, compared with around 18% of the forest area in the United States, 7% in Canada and less than 1% in Russia.

GRAPH 11.3.1

Area of certified forest, 1993-2002



Notes: FSC = Forest Stewardship Council, PEFC = Pan European Certification System, SFI = Sustainable Forestry Initiative, CSA = Canadian Standards Association system, ATFS = American Tree Farm System.

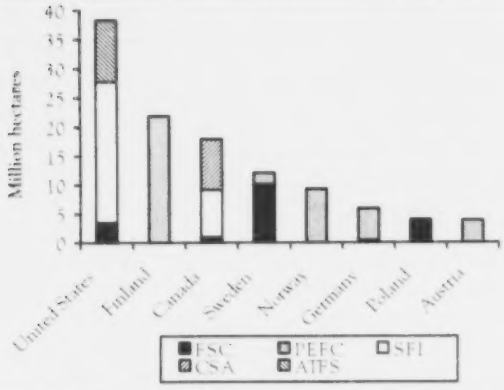
Sources: Individual certification systems, and for ATFS, country correspondent, 2002.

[3] Certification is understood here in the strict sense, requiring third party audit. Please note that ISO 14001 type process certification systems which usually do not lead to certified products in the market are not covered here.

[4] The reference area is based on *Temperate an Boreal Forest Resources Assessment 2000* data for forest area, excluding other wooded land (forest area in Europe excludes CIS countries).

GRAPH 11.3.2

Top 8 countries' certified forest area, mid 2002



Notes: FSC = Forest Stewardship Council, PEFC = Pan European Certification System, SFI = Sustainable Forestry Initiative, CSA = Canadian Standards Association system, ATFS = American Tree Farm System.

Source: Individual certification systems, and for ATFS, country correspondent, 2002.

11.3.2 Supply of CFPs

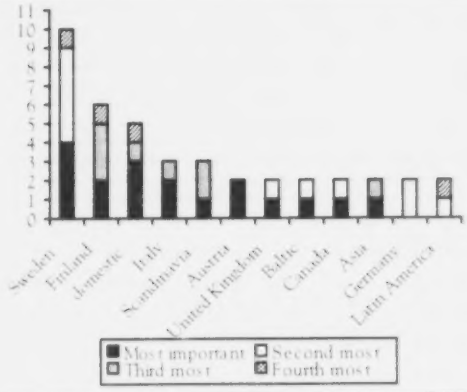
In 2002, the potential timber supply from the world's certified forests is large, estimated at about 234 million m³ on an annual basis (Atyi and Simula, 2002). The roundwood supply of several large producing countries in Europe is up to 100% from certified forests, for example in Finland. However, only a small fraction of potential annual supply of wood from certified forests is actually traded as CFPs and a large majority is marketed without reference to certification status. In the absence of official trade figures the actual volume or share of CFPs is difficult to estimate.

Technically, the lack of chain-of-custody (CoC) certificate holders is a major constraint on supply. Today, about 2,500 CoC certificates are issued worldwide, of which about 2,350 or 94% are FSC and 142 are PEFC. Much of the wood from PEFC-certified forests and from forests certified according to SFI or CSA standards is thus technically not able to move downstream as CFPs.

Furthermore, only the FSC logo has been around for almost a decade. The PEFC system in Europe started to issue licences for logo use in 2001. A total of 3,734 companies to date (of which 94% in Germany) have the right to use the PEFC logo. Neither the SFI nor the CSA systems in North America currently label products. SFI has developed an SFI mark and is working further on verification for the wood supply chain. Similarly, CSA has introduced a forest products labelling programme. However, intermediary producers have not yet indicated strong demand for these additional labels.

GRAPH 11.3.3

Most important suppliers of certified forest products, 2002



Note: The vertical axis depicts the number of cases a country was mentioned in responses to the survey to the country on certification. The categories "first", "second", etc. show the ranking given for the countries (e.g. 4 correspondents ranked Sweden as the most important market, 5 as the second most and 1 as the fourth most).

Source: Estimations given by UNECE & FAO officially nominated network of country correspondents on certified forest products markets and certification of sustainable forest management in response to a request for information in May 2002. The results are based on the responses of 27 country correspondents within the UNECE region.

The most important suppliers of CFPs today are Sweden and Finland according to the responses of the national correspondents network (graph 11.3.3). These and other traditionally export-oriented countries such as Austria mainly use domestic supplies. Scandinavian countries also source timber from certified forests from Baltic countries and thus are drivers of demand (see the following section). Please note that graph 11.3.3 does not distinguish between supply of raw material, secondary and finished products. Italy and others source their raw material from different regions, including eastern Europe, and supply the United Kingdom with further processed or final products. The United Kingdom in turn is reported to re-export finished products, such as furniture and DIY products to other countries. Similar complex trade pattern exist between Baltic and Nordic countries, from which a good part is re-exported to Germany, the United Kingdom and other markets. The majority of CFPs are temperate softwood. With nearly the total forest area of a number of countries completely certified, trade patterns for CFPs over time have become identical

with the traditional trade patterns existing in each country. Also tropical wood and hardwood CFP supply tends to follow established trade patterns.

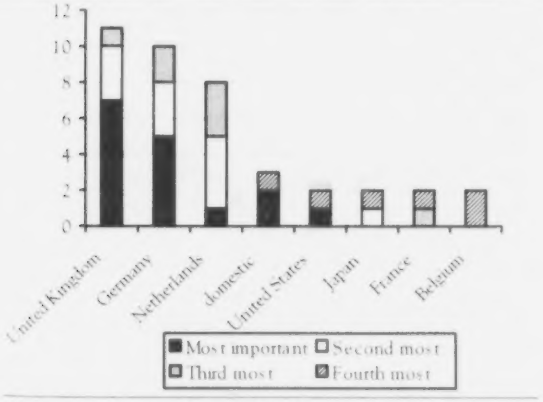
11.4 Demand for CFPs

11.4.1 Geographical location

Today CFPs are available in about 20 countries in the UNECE region. Market demand for CFPs continues to be mainly identified in western Europe. This result of the country correspondents survey confirms the findings of last year. Within Europe strongest demand for CFPs seems be in the United Kingdom. Germany is increasingly reported as a major market, followed by the Netherlands. The majority of internationally traded CFPs find their final destination there, followed by the United States and others, including Japan (graph 11.4.1).

GRAPH 11.4.1

Most important markets for certified forest products, 2002



Note: The vertical axis depicts the number of cases a country was mentioned in responses to the survey to the country correspondents on certification. The categories "first", "second", etc. show the ranking given for the countries (e.g.: 7 correspondents ranked the United Kingdom as the most important market, 3 as the second most and 1 as the third most).
Source: Estimations given by UNECE & FAO officially nominated network of country correspondents on certified forest products markets and certification of sustainable forest management in response to a request for information in May 2002. The results are based on the responses of 27 country correspondents within the UNECE region.

No, or at best low, interest in the final consumption of CFPs seems to prevail in the southern parts of Europe, in most eastern European countries and Russia. However, intermediary producers located in southern European countries are reported to import CFPs from various regions globally, e.g. small quantities of hardwood for furniture or raw material for panels. Nordic countries, Italy and some other countries apparently import CFPs for further processing and re-export products of which only a minor share to date bear a CFP label. Graph 11.4.1 has to be interpreted with caution as several trade routes of wood from certified forests have been highlighted where to date little demand for CFPs was reported, e.g. in Japan. It is possible or even likely that wood exported as CFPs is further processed or marketed without reference to certification status.

Information on the share of certified wood in major import markets is often based on rough estimates. In the United Kingdom respondents have provided a crude estimate of 10% of the total volume of wood consumption and around 1% of paper consumption to be CFPs. In the Netherlands, one of the few countries with more reliable data, the share of CFPs in total wood supply is currently estimated to be around 7% or about 620,000 m^3 (FSC and Keurhout authorized wood), up from about 5 to 6% in the previous year. An estimation from Denmark is given at 500,000 m^3, Switzerland reported about 400,000 m^3, or 5 to 10% of total roundwood supply. In Germany the share, estimated in 2001 to be less than 1%, is still low but reported to growing. Other countries, such as Belgium, indicate a rough estimation of up to a maximum of 5%. Overall, the market share of CFPs of total volume of wood supply across Europe seems to be less than 5% in mid-2002. In the United States, an estimation is given of 2% of total consumption of wood to be eco-labelled and less than 1% of paper consumption. In Canada, it is estimated that more than 5% of wood and paper products carries an eco-label. In many countries a higher share of CFPs is reported to be labelled in the wood sector than in the paper sector. For Japan the estimation of CFPs is around 23,000 m^3 or 0.02% of total wood consumption.

Business-to-business market players close to consumers, such as in retail, do-it-yourself or home improvement markets, continue to be the strongest drivers for demand, especially in the United States. However, up to now, a lack of demand for wood labelled with logos from forest certification schemes seems to prevail throughout the UNECE region, with the exception of a range of FSC labelled products. This is due to several factors, including low levels of awareness of CFP logos by customers and consumers as well as the interest of some retailers in using their own rather than newly introduced marks. Owing to this low consumer demand and awareness, little pressure is exerted on middlemen to get a chain-of-custody certification or to label all forest products as CFP. Potential suppliers have also experienced that

company policy statements have not always been followed up, especially in the United States.

Of the labelled CFPs available on the market, the majority are FSC-certified. In more than 14 countries of the UNECE region, FSC-certified CFPs are reported to be available, compared to more than 7 countries with PEFC products. In about 8 countries, mostly northwestern European countries, Canada and the United States, CFPs are available across the whole spectrum of wood products, including paper, paperboard, panels, interior and exterior construction, furniture and DIY products. In most countries CFP demand seems to focus on few specific product groups.

It is expected that the number of countries where PEFC-certified wood is available across a wider range of products will increase considerably. Over the coming year many respondents expected a market growth between a further 50 to 100% of certified wood, especially for PEFC products in the sawnwood and panel sectors, as well as paper products, i.e. in the further processing sectors. Strong market growth is also expected for some construction components such as flooring. Responses from retailers indicate moderate growth expectations.

Also a lack of supply of CFPs is still reported in major European import markets, including the United Kingdom, the Netherlands and in Germany as well as in the United States. However, this seems to be mainly concentrated on FSC-certified niche products and adequate quality and quantity of products at times. This includes teak for garden furniture after FSC put certificates in Indonesia on hold. At the same time, a lack of demand is expressed in several other countries, e.g. by exporting countries with PEFC-certified products, but also by FSC CFP suppliers, e.g. softwood from some eastern European suppliers.

The Global Forest and Trade Network (GFTN), designed to create demand for CFPs by the World Wide Fund for Nature (WWF) through WWF Buyers and Producers Groups, comprises 714 members in mid-2002, about the same number as in 2001. Active in around 20 countries worldwide, more than half of these companies are located in western Europe, and more than 90% are in Europe or North America. GTFN seems to still cover about 50% of CFP demand in major import markets, such as in the United Kingdom, the Netherlands and the United States. In other countries the network has been less successful.

Anecdotal information on price premiums actually paid in the business-to-business markets indicates difficulties in securing a stable supply of CFPs according to specifications needed and premiums tend to occur in niche markets. Price premiums have been reported for tropical hardwoods, and also for FSC-certified softwood roundwood sold to local suppliers, e.g. in Switzerland. Comparative price quotes for FSC-certified sawn hardwood species reported by a market intelligence service indicate price premiums sought in the range of 12 to 20% (hardwoodmarkets.com, 2002). Atyi and Simula (2002) note that, as the current demand for certified tropical timber exceeds supply in some export markets, some suppliers report price premiums ranging from 5% to 65% in sawnwood and plywood. The higher figures refer to specialty products sold through retail outlets. With a more efficient market, such price premiums, where they exist outside niche markets, are likely to disappear. However, it is likely that price premiums will continue to exist for a range of tropical higher value products where demand will outstrip supply for some time to come.

Oliver (2001) reported on a survey of European furniture manufacturers, indicating very little interest from these companies in forest certification. The issue, more important in the United Kingdom, central Europe, and Nordic countries, was found to be more important for low value furniture supplied to the DIY sector.

11.4.2 Country situations

In the United Kingdom, the market situation varies by sector. The DIY sector seems to show most demand for CFPs, while other intermediary producers and traders show less interest. Headed by large companies like B&Q, some players in the DIY sector aim to assure their customers about timber use. Major building suppliers, such as Saint-Gobain intend to become involved in the CFP market, possibly encouraged by the Government's timber purchasing policy issued in 2000. Timber supplied to those retail sectors is generally softwoods and panel products, *inter alia*, from producers such as Ireland, Scandinavia and the Baltic countries.

In the Netherlands, demand for tropical CFPs is rather high, especially in the professional sector, but supply is lagging behind (Bosdijk 2002). Demand for Nordic softwood so far does not exist. Bosdijk states that only recently the leading softwood importing companies in the Netherlands private sector have decided to offer the market all softwood from Keurhout accepted certified forests with this label. This will give a tremendous boost to the availability of CFPs on the Netherlands market. Furthermore, it was reported that the Government has taken steps to set up a new guideline for judging sustainably produced wood on the Netherlands market over the next year.

In Germany several large DIY chains, members of the GTFN, are the main drivers of demand for FSC-certified tropical wood. Likewise, a range of municipalities has issued purchasing policies restricting tropical timber use or favouring or prescribing CFPs, if tropical timber is to be used. As in the Netherlands, demand for non-tropical CFPs has been low across the range of products. As the Association of German Magazine Publishers and the Association of German Paper Industries have recently accepted PEFC, some changes in these sectors are expected soon.

In the United States demand is mainly created by a few very large DIY retailers, such as Home Depot and Lowe's. These retail chains prefer their own label over those of forest certification schemes. IKEA, a large furniture retailer with headquarters in Europe, has a similar strategy, with only some specific products, such as high quality woods, labelled by FSC. Also some pulp and paper producers, for example Norske Skog in Norway, have so far preferred not to label their CFPs.

11.4.3 Final consumer demand

11.4.3.1 Private consumers

Demand by private end consumers remains an insignificant factor in the market for CFPs. Nevertheless general consumer sentiment on deforestation, forest degradation and loss of biodiversity and notably on tropical deforestation keeps the sector under pressure to act. Surveys conducted in major European markets show that the public is of the opinion that forest area and forest biodiversity is declining both domestically and abroad, with an especially negative view on deforestation in tropical countries (Ramersteiner 1999). Surveys also show that consumers especially blame forestry and logging for deforestation in the tropics (ibid.).

Forest certification is increasingly becoming a main instrument for communication on sustainable forest management throughout the forest and trade sectors. CFPs are able to help to maintain or enhance the overall green image of wood products, one of the most important competitive strengths of wood against substitute materials. However, consumer awareness of even the longest established logo on CFPs, of the FSC, is still low even in the most advanced markets such as the United Kingdom, the Netherlands or Germany. The secondary importance of environmental friendliness as a quality characteristic of products gives little reason to forecast significant changes.

Consumers in some western European markets show sensitivity to environmental friendliness of tropical wood products, if they recognize a wood product as being of tropical origin. Partly as a consequence, garden furniture made of certified tropical wood is one of the few markets with stronger indications of demand directly from final consumers, especially in the Netherlands, Denmark, Belgium and Germany.

Many players active in the market see the lack of consumer awareness and interest as a major hampering factor for market growth. With PR campaigns on CFPs in several countries running or about to start, awareness is destined to grow, albeit very slowly.

11.4.3.2 Public procurement

Public procurement continued to become a growing source of demand for CFPs. Several national Governments have announced public procurement measures that directly or indirectly favour CFPs, especially for tropical timber, including the United Kingdom's "Central Government Timber Procurement Policy". The Governments of the Netherlands and Denmark, and recently the French and German environment ministries, have all communicated public procurement policies that include criteria favouring the purchase of CFPs. This adds to policies already existing at the municipality level in several European countries, including the United Kingdom, Denmark, the Nordic States, the Netherlands, Belgium, Germany, Switzerland and Austria as well as in several states of the United States.

Not every policy is implemented as written. In the United Kingdom, the WWF claims that only a minority of local municipalities actually have a purchasing policy requiring CFPs and that the United Kingdom policy announcement was not followed up by action. Surveys conducted in the course of this review nevertheless indicate that public procurement is estimated to be responsible for up to 40% of demand for CFPs in the United Kingdom, 25% in the Netherlands and is an important factor in several other countries, including Belgium, Switzerland and the United States. No indication of the scale of demand by public bodies is available from Germany.

A further issue has emerged strongly in most of the above-mentioned countries that is likely to push CFPs in governmental purchasing: the fight against illegal logging. A decision in 2001 by the Government of Denmark recognizes the FSC label as an example of an instrument to provide credible assurance that timber is legally and sustainably produced. Denmark is currently drawing up guidelines for the public purchase of tropical timber, to be adopted in 2003. The European Community is still in the process of revising its public procurement policy and it intends to set actions addressing illegal logging that might involve

certification mechanisms. It is likely that some other European Governments will follow with similar action over the next years. Governments are, however, very unlikely to specify one single scheme as being acceptable.

11.5 Conclusion

As more and more temperate forests become certified, supplying CFPs increasingly becomes standard business practice for softwood. However, with little interest from final consumers and low recognition value of individual logos, it is becoming more common that intermediaries supplying large retailers or producers of final products will be required to document their sourcing from certified forests. Final producers and retailers will then use their own labels on products they sell.

The situation is considerably different for CFPs from FSC certified tropical forests. Owing to lack of supply and the credibility of backers of FSC, FSC certified specialty and decorative products such as garden furniture can be sold with a premium and are marketed with the FSC logo. The difficulty of establishing credible certification systems and chains of custody from tropical regions will continue to restrict supply of tropical CFPs, with the exception of wood from large FSC certified plantations. Discussions in 2002 and 2003 will focus, *inter alia*, on possibilities of phased approaches to certification in tropical countries.

This chapter attempted to give an update on the market situation of CFPs in the UNECE region, based on information provided by about 45 experts across the region, as well as on other sources.

Owing to a lack of CFP information in official statistics, comprehensive and objective information of this new market sector will remain difficult.

11.6 References

Atyi, R. E., Simula, M. 2002. "Forest Certification: Pending Challenges for Tropical Timber". Background paper to the ITTO International Workshop on Comparability and Equivalence of Forest Certification Schemes, Kuala Lumpur, April, 2002.

Bosdijk, K., 2002. "Market requirements for certified timber and certified timber products – the European perspective". Paper presented at the to the ITTO International Workshop on Comparability and Equivalence of Forest Certification Schemes, Kuala Lumpur, April, 2002.

hardwoodmarkets.com, April 2002 issue, published by hardwoodmarkets.com Ltd.

Oliver, R., 2001. "Market and Environmental Information for the Forest Products Industry". Technical Report for October/November, 2001.

Rametsteiner, E. 1999. "European Citizens and their Attitude towards Forests, Forestry and Wood". In: Pajari, B., Peck, T., Rametsteiner, E. (Eds.), *Potential Markets for Certified Forest Products in Europe*. EFI Proceedings No. 25, European Forest Institute, Joensuu, Finland.

Survey of officially nominated country correspondents in the UNECE region on certified forest products and certification of sustainable forest management, May 2002.

Chapter 12

Trade in value-added forest products accelerating faster than primary-processed products trade

Market developments for value-added forest products[1]

Highlights

- Multiple benefits from value-added processing of wood have attracted policy makers and developers of forest industry in most emerging exporter countries.
- International trade barriers on value-added wood products, especially furniture have liberalized, thereby increasing the import component of consumption, thus creating more export opportunities for developing countries.
- International trade in the three groups of major secondary-processed products reached a total value of $33.7 billion in 2000, up by 27% from 1996.
- In all major markets, furniture imports from developing countries have grown faster than overall imports, and influx of products from China is the single most important reason behind this development.
- In profiled wood, Latin American suppliers (Chile, Brazil) have reached a dominating position in the United States market, while Asian and central and eastern European suppliers have been gaining ground in Japan and in Germany, respectively.
- Competition will force the industrialized countries to transform their manufacturing industries; cost-competitive regions will participate in the supply chains.
- Tropical secondary-processed wood products production and exports will continue to grow rapidly in coming years, with corresponding reductions in primary tropical timber products.
- Engineered wood products, specifically glulam, I-beams and laminated veneer lumber, were at record high production levels in North America in 2001, with higher levels forecast for 2002.

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Secretariat introduction

This chapter on value-added products[2] continues efforts to demonstrate the demand for primary-processed forest products. Some production of primary products is not accounted for in statistics when integrated processing occurs; for example, from log processing directly through furniture component manufacturing. Only by analysing trade flows of secondary-processed forest products can a market analysis be complete.

Sections of this chapter come from our partner organisations: the International Trade Centre UNCTAD/WTO (ITC[3]), the International Tropical Timber Organization (ITTO) and the USDA Forest Service. Beginning this year the secretariat strengthened the working alliance with ITC through Mr. Jukka Tissari, Market Development Officer in Wood Products at ITC. The secretariat sincerely thanks Mr. Tissari for his important contribution to the majority of the chapter which analyses the trade of value-added forest products. He authored all sections except the one on engineered wood products. He is a member of the UNECE/FAO Team of Specialists on Forest Products Markets and Marketing.

Statistics in this chapter do not yet come from the Joint Forest Sector Questionnaire, as in the preceding statistical-based chapters. Although the Questionnaire does contain some questions on important value added forest products trade, the responses have been insufficient to produce a basis for this chapter's analysis. Instead the author draws on UN COMTRADE[4] statistics for the major countries involved in the international trade of further-processed wood products.

The second part of the chapter is an analysis of the secondary-processed wood products trade of tropical timber. This part was drafted by Mr. Tissari, largely based on inputs received from Messrs. Michael Adams and Steve Johnson, both market analysts at the ITTO. Formerly this section was included in the next chapter on tropical timber, but for the first time we have included the analysis here.

The section on engineered wood products was written by Mr. Craig Adair, Director, Market Research, APA-the Engineered Wood Association and Dr. Al Schuler, Research Economist, United States Department of Agriculture, Forest Service. They have updated their more lengthy analysis published in the *Review 1999-2000*, and its update for the *Review 2000-2001*, in order to show the important market developments for engineered wood products in North America. The secretariat truly appreciates that Mr. Adair and Dr. Schuler continue to analyse the markets for this publication. They show that engineered wood products elevate wood use to higher performance and make efficient use of the wood resource. Although UNECE/FAO does not collect statistics on engineered wood products, these value-added products are increasingly traded internationally and used in residential and non-residential construction. Engineered wood products and their component products are key components of the sawnwood and wood-based panels demand equation.

12.1 Introduction

Wood processing industries contribute in many ways to developing national economies, and as the sector moves downstream into value-added production, these benefits multiply. Secondary processing provides additional employment, which, in turn, expands the tax base in the country. Dynamic industry creates a trained workforce, and can contribute through consistent demand to the development of physical and institutional infrastructure (e.g. roads, power and water supplies, banking facilities, R&D). It also contributes to foreign exchange earnings and stimulates investments in a whole range of supporting industries. And more importantly, value-added processing helps the countries to utilize their wood resources more efficiently, which lends support to the sustainable management of the natural and planted forests.

These potential benefits from greater value-added processing of wood before exporting have caught the eye of the planners and developers of the forest industry sector across the forest-endowed countries, in both temperate and tropical countries. They have convinced many developing countries to move up in the value chain of exports, from primary products to secondary processed wood products (SPWP), particularly to furniture. These end-product markets are seen as less volatile than the primary products markets, which are more prone to boom-bust cycles.

The recent decade has brought numerous developing countries into the value-added segment with varied strategies and mixed achievements. The country with the most significant development in the last two years is no doubt China, whose furniture

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[2] "Value-added", "secondary-processed" and "further-processed" are terms used synonymously throughout the chapter.

[3] International Trade Centre, UN Conference on Trade and Development and the World Trade Organization.

[4] UN trade database showing trade by direction for over 100 countries since 1960s for all SITC and HS codes. Based on national customs statistics.

TABLE 12.2.1

Value-added products chapter coverage

Product groups	*Group breakdown*	*SITC Rev. 3*	*Harmonized System*
Wooden furniture	Seats of cane, osier, bamboo	821.13	9401.50/61/69
	"Other" seats with wooden frames	821.16	9403.30/40/50/60/80
	Office furniture, wood	821.51	
	Kitchen furniture, wood	821.53	
	Bedroom furniture, wood	821.55	
	Other furniture, wood	821.59	
	Furniture other than metal, wood or plastic	821.79	
Builders' joinery and carpentry	Doors, windows, their frames, shingles and shakes, assembled parquet panels, other	635.3	4418.10/20/30/40/50/90
Profiled wood	Wood continuously shaped along any of its edges or faces, whether or not planed, sanded or finger-jointed	248.3 248.5	4409.10 4409.20

exports have grown at a phenomenal pace, particularly into the United States. Other emerging exporters are found among countries in central and eastern Europe (Poland, Romania, Czech Republic, and Slovenia) and in southeast Asia (Indonesia, Malaysia, Thailand, and Viet Nam). In Latin America, Brazil, Chile and Mexico have greatly diversified their exports to the United States markets in particular.

This chapter provides an overview of the Organisation for Economic Co-operation and Development (OECD[5]) countries' imports for three products groups: wooden furniture, builders' joinery and carpentry, and profiled wood. The assessment is based on UN COMTRADE data extraction done at ITC. Changing origins of imports by products in the "Big-5" markets are discussed for 1996 through 2000, the most current statistics available. The five selected countries are those that dominate overall imports of SPWP (in order of import value): United States, Germany, France, United Kingdom and Japan.

A separate section analyses value-added products of tropical origin, based on the data supplied by ITTO. An update on North American engineered wood products completes the chapter. Finally conclusions are drawn on the effects of the intensifying competition in the UNECE region.

12.2 Scope

Product coverage follows ITC's previous and ongoing work on the subject. Therefore as the basis is different from last year, there are minor deviations from the coverage of the 2000-2001 Forest Products Annual Market Review, which altogether led to lower trade values than in the previous year's review. The most important difference is the exclusion of furniture parts (SITC[6] 821.80), which are only partly of wood (but also of plastic, metal, etc.) (table12.2.1). The second difference is the inclusion of seats of cane, osier (willow), bamboo or similar natural fibrous materials (SITC 821.13). In geographical terms, this chapter focuses on the OECD group as a rough estimate of world imports (91% of "world" in 2000). Thus countries such as China, Russia, India and a great number of smaller countries are excluded as importers. The statistical reporting of OECD countries into COMTRADE tends to be more accurate than the figures given by countries in other regions.

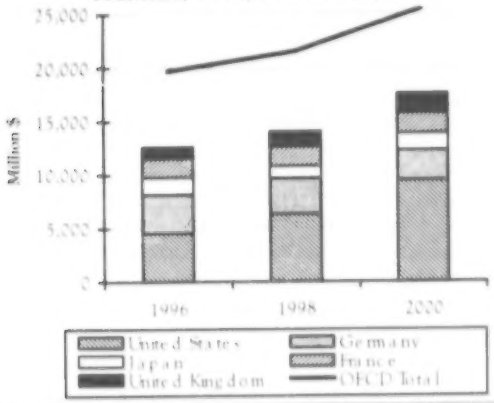
It must be noted that these chapters cover only the three product categories which form the bulk of exports in secondary processed wood products. The product scope is therefore more restricted than, for example, in ITTO's *Annual Review and Assessment of the World Timber Situation*, and in the chapter that follows here on tropical wood, where also products for domestic/decorative use, packaging/pallets, coopers' products and tools, handles, etc. are covered. This has to be taken into account when comparisons with other sources are being made.

[5] OECD 30 member countries: Australia, Austria, Belgium, Canada, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Korea, Luxembourg, Mexico, Netherlands, New Zealand, Norway, Poland, Portugal, Slovak Republic, Spain, Sweden, Switzerland, Turkey, United Kingdom and United States.

[6] Standard Industrial Trade Classification

GRAPH 12.3.1

OECD imports of wooden furniture for major countries, 1996, 1998 and 2000



Source: UN COMTRADE, 2002.

TABLE 12.3.1

Imports of wooden furniture by major countries 1996, 1998 and 2000

(Million $)

	1996	1998	2000
United States	4 550	6 326	9 469
Germany	3 619	3 357	2 789
France	1 807	1 798	1 902
Japan	1 589	1 145	1 580
United Kingdom	1 031	1 408	1 791
Belgium-Luxemburg	1 008	1 029	992
Netherlands	1 002	942	1 005
Canada	463	579	709
OECD total	**19 708**	**21 507**	**25 481**

Source: UN COMTRADE, 2002.

12.3 Import trends of secondary processed wood products in 1996-2000

12.3.1 Wooden furniture

OECD countries imports of wooden furniture amounted to $25.5 billion in 2000, compared to $19.7 billion in 1996 (graph 12.3.1 and table 12.3.1). The absolute growth of import value was 29% over that four-year period. These figures exclude furniture parts and components made of wood and non-wood materials.

The positive growth rate was mainly a result of strong import growth in the major markets, particularly the United States and the United Kingdom. In addition some relatively minor importers like Canada, Australia, Spain, Ireland and Mexico (not in the graph) have doubled or tripled their imports. It is worth noting that developing countries have gained market shares over their competitors in developed countries. In all major markets, imports from the developing market economies have grown faster than overall imports. Influx of furniture from China is the single most important reason behind this development.

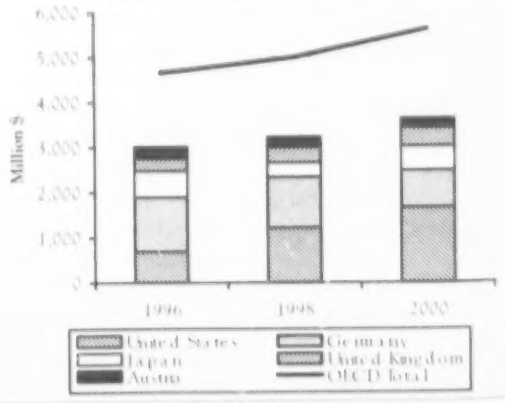
The top-10 importers accounted for 86% of the total trade in 2000. The United States alone accounted for 37% of all OECD imports ($9.5 billion). The United States imported more SPWPs in value than the following five largest countries together. Imports have declined in a few countries such as Germany, Japan and Belgium-Luxembourg. Recession in Germany's construction sector has been a precursor for decreasing furniture consumption and imports. New residential housing has fallen in a cyclical pattern since the peak of 1997 (see discussion in chapter 2). The construction crisis is generally deeper in the new federal States (*Bundesländer*) (East) than in the old federal states (West). Japan's economy has ground to a halt and stagnated throughout the last decade and so have the furniture imports. Dwelling construction has followed a mostly downward trend since 1990, and it is expected to continue falling. Also ageing households and increasing number of single and two-person households are to be reckoned with.

12.3.2 Builders' joinery and carpentry

Growth in OECD imports of builders' joinery and carpentry (BJC) has been slightly slower than in furniture. Imports have grown from $4.7 billion in 1996 to $5.6 billion in 2000, equal to a 21% increase during the period (graph 12.3.2 and table 12.3.2). The

GRAPH 12.3.2

Imports of builders' joinery and carpentry for major countries, 1996, 1998 and 2000



Source: UN COMTRADE, 2002.

TABLE 12.3.2

Imports of builders' joinery and carpentry by major countries, 1996, 1998 and 2000
(Million $)

Importer	*1996*	*1998*	*2000*
United States	695	1 212	1 654
Germany	1 205	1 124	820
Japan	573	311	530
United Kingdom	279	344	412
France	162	167	225
Austria	257	229	205
Italy	125	143	195
Switzerland and Liechtenstein	218	189	172
OECD total	**4 653**	**4 990**	**5 618**

Source: UN COMTRADE, 2002.

top-8 countries accounted for 75% of the OECD imports, with United States alone absorbing 29%.

Among the major importers, the United States, the United Kingdom, France and Italy have shown a clear growth trend, while imports into Germany, Japan, Austria and Switzerland have all declined. Poor performance of the (mainly residential) construction sectors in these countries, coupled with stringent product standards and harsh domestic competition (see list below), are the main reasons for the decline in imports.

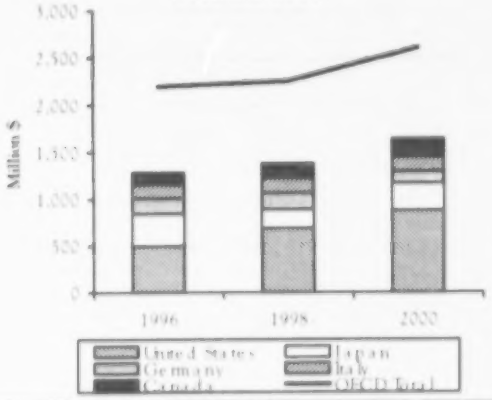
Contrary to the developments in furniture imports, the developing market economies have lost their shares of overall BJC imports by OECD countries. The reasons for this are several:

- BJC segment is strictly regulated by country-specific standards stipulating the physical, chemical (glues and finishes) and dimensional properties.
- Manufacturers in the developed countries have made technical innovations through continuous product development, which developing countries have not yet been able to match.
- Increasingly, the windows, doors and floorings are sold as a building system (total components such as factory-glazed window units rather than profiled frames), something which remains out of reach for developing countries.
- New material combinations have been developed e.g. for windows, substituting hardwood and instead combining wood with aluminum and PVC.

In conclusion, this means that technical entry barriers have become even more difficult for developing countries to overcome.

GRAPH 12.3.3

Imports of profiled wood for major countries, 1996, 1998 and 2000



Source: UN COMTRADE, 2002.

TABLE 12.3.3

Imports of profiled wood for major countries 1996, 1998 and 2000
(Million $)

	1996	*1998*	*2000*
United States	500	695	881
Japan	346	198	292
Canada	130	157	195
United Kingdom	124	145	156
Italy	143	157	151
Germany	169	178	126
Belgium; Luxembourg	90	92	119
Netherlands	82	61	78
OECD total	**2 199**	**2 256**	**2 606**

Source: UN COMTRADE, 2002.

12.3.3 Profiled wood

OECD imports of profiled wood reached $2.6 billion in 2000 (graph 12.3.3 and table 12.3.3). The trade grew 18.5% between 1996 and 2000, mainly thanks to increases in the United States and Japan. The two countries took 45 % of all OECD imports in 2000, while the top-8 group accounted for 77% of the total imports.

Growing imports have been recorded also by Canada, Belgium and the United Kingdom, while German imports have declined notably. Following the economic and political crisis in Asia in 1998, Japanese imports have not yet recovered to the 1996 levels.

TABLE 12.4.1

Regions of origin of furniture imports for the five largest importing countries 1996 and 2000

		USA		Germany		France		UK		Japan	
Regions		1996	2000	1996	2000	1996	2000	1996	2000	1996	2000
Asia	%	44.3	47.0	4.5	9.2	8.3	14.4	22.4	31.4	68.3	79.6
North America	%	23.1	23.8	0.5	0.4	0.8	0.9	3.6	3.6	8.5	4.7
EU/EFTA	%	20.4	18.4	61.2	45.4	77.8	67.6	57.2	47.1	21.5	14.7
Eastern Europe & Russia	%	0.7	1.4	28.8	41.2	8.0	10.2	5.4	8.7	0.8	0.5
Latin America	%	9.6	8.5	2.0	1.5	3.3	5.0	3.1	3.6	0.1	0.1
Others	%	1.8	1.1	2.9	2.4	1.8	1.9	8.3	5.6	0.8	0.4
Total imports, billions	$	4.6	9.5	3.6	2.8	1.8	1.9	1.0	1.8	1.6	1.6

Source: UN COMTRADE, 2002.

TABLE 12.4.2

Regions of origin of Builders Joinery and Carpentry imports for the five largest importing countries, 1996 and 2000

		USA		Germany		France		UK		Japan	
Regions		1996	2000	1996	2000	1996	2000	1996	2000	1996	2000
Asia	%	12.0	12.2	10.5	12.9	12.3	15.8	29.9	21.4	29.6	30.3
North America	%	69.2	68.2	1.2	0.5	1.6	1.1	4.1	7.1	49.0	26.4
EU/EFTA	%	6.6	5.9	62.3	49.8	78.2	72.8	45.2	50.0	14.7	35.0
Eastern Europe & Russia	%	-	0.5	17.6	29.4	2.9	5.9	3.3	6.3	-	2.1
Latin America	%	11.7	12.1	0.2	0.3	2.1	3.0	11.5	6.8	0.4	0.2
Others	%	0.5	1.0	8.2	7.1	2.9	1.3	6.1	8.3	6.3	6.0
Total imports, billions	$	0.70	1.65	1.21	0.82	0.16	0.22	0.28	0.41	0.57	0.53

Source: UN COMTRADE, 2002.

This is not surprising, because profiled wood and BJC are both structural products, which follow similar demand dynamics (driven largely by new construction and renovation activity).

12.4 Changing origins of imports in 1996-2000

12.4.1 Wooden furniture

In terms of percentage breakdown of wooden furniture imports by origin, the five main importing countries show a mixed picture (table 12.4.1). The most balanced situation prevails in the United States market, where Asian sources (predominantly China) account for 47% of imports, while Canada and Europe (EU and EFTA) supply 24% and 18%, respectively. Latin America is also important with an 8.5% share, decreasing slightly from 1996.

In Europe, the intra-regional trade is much more prominent with EU/EFTA Europe supplying as much as two thirds of the French imports, and slightly less than half of the German and United Kingdom imports of wooden furniture. Asian influence has grown in all three markets, albeit to a lesser degree than in the United States. Central and eastern European countries have become a more important source for Germany's imports, but not for France and the United Kingdom.

Finally, Asia dominates the Japanese imports with a nearly 80% market share, while Europe supplies much of the remaining imported furniture.

12.4.2 Builders' joinery and carpentry

In BJC, Japan has moved towards the most balanced import supply, where three regions supply roughly equal shares of the total imports. North America has lost one half of its export value to Japan between 1996 and 2000, but the EU/EFTA region has more than doubled its BJC exports to Japan (table 12.4.2).

TABLE 12.4.3

Regions of origin of profiled wood imports for the five largest importing countries 1996 and 2000

		USA		Germany		France		UK		Japan	
Regions		*1996*	*2000*	*1996*	*2000*	*1996*	*2000*	*1996*	*2000*	*1996*	*2000*
Asia	%	15.4	18.0	4.6	11.3	3.5	6.2	25.4	25.1	62.2	70.3
North America	%	33.3	28.7	3.7	1.5	3.8	2.0	10.0	15.8	29.8	16.3
EU/EFTA	%	3.1	4.1	72.4	60.9	73.4	74.1	59.8	53.5	5.1	10.5
Eastern Europe & Russia	%	0.2	0.6	15.1	22.7	6.2	9.5	1.1	1.8	-	-
Latin America	%	44.5	43.0	0.3	0.6	11.2	5.6	1.6	2.1	0.4	0.8
Others	%	3.6	5.6	3.8	3.1	1.9	2.6	2.1	1.5	2.4	2.1
Total imports, billions	$	0.50	0.88	0.17	0.13	0.06	0.07	0.12	0.16	0.35	0.29

Source: UN COMTRADE, 2002.

In the United States, imports of BJC are mainly from Canada (68%), followed by Asia and Latin America (12% each). In Europe, intra-regional trade is flourishing particularly in France, which imports 73% of its needs from other EU/EFTA countries. In Germany and the United Kingdom, half of the total imports come from EU/EFTA. Central and eastern Europe again plays an important role in Germany's imports (23%), as these new exports show dramatic increases but upon small volumes. Asia has a 25% share of the imports to the United Kingdom in BJC.

12.4.3 Profiled wood

Profiled wood has become a major export business for Latin American suppliers, especially Mexico, Chile and Brazil, and the region holds a healthy 43% share of the United States imports, ahead of Canada (29%) and Asia (18%) (table 12.4.3). Latin American suppliers enjoy competitive advantages such as lower transportation and wood costs over their competitors in other regions. Much of the supply is based on large-scale mills producing mouldings of plantation timbers such as the pines of Chile and Brazil (mainly *Pinus radiata, taeda, elliottii, caribea* and *oocarpa*). In Brazil, the prime tropical hardwoods for mouldings are cambara, tatajuba, tauari, cedro, marupa, ipê, jatoba, angelim, curupixa and imbuia. Eucalyptus is increasingly seen as a low-cost alternative moulding species with an appearance making it suitable for competing with red oak, alder and cherry in the United States.In Europe, most of the profiled wood originates from within the continent, but the share of the EU-EFTA imports ranges from 74% in France, to 61% in Germany and 54% in the United Kingdom. In Germany, imports of profiled wood have grown only from Asia and eastern Europe. The United Kingdom imports higher shares from North America and Asia than Germany or France. The latter has become even more Euro-centric in its imports.

In Japan, Asian suppliers of profiled wood have increased their market shares to 70% of total imports, leaving 16% of the market to North America and 10.5% to Europe.

12.5 Trends in tropical products

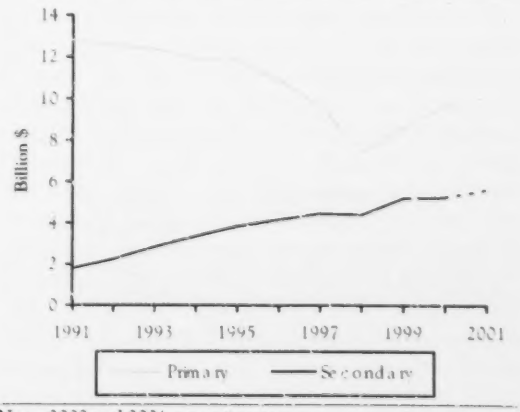
12.5.1 Mega-trends

ITTO consumer and producer countries account for 95% of the world's trade in tropical wood products, and this section, prepared together with ITTO, investigates the secondary processed wood trade of ITTO member countries.

The historical development of tropical wood imports by ITTO consumer countries shows a consistent growth trend for secondary-processed products (graph 12.5.1). Imports of primary products,

GRAPH 12.5.1

ITTO consumer imports of primary and secondary tropical timber products, 1991-2001



Note: 2000 and 2001 are estimates.
Source: ITTO, 2002.

TABLE 12.5.1

Major exporters of secondary products by ITTO producer countries 1996, 1999 and 2000
(Million $)

Exporter	1996	1999	2000	% change 1999 to 2000
Indonesia	1 532	1 693	1 988	17.4%
Malaysia	1 106	1 312	1 269	-3.3%
Thailand	741	846	978	15.7%
Brazil	451	584	687	17.6%
Philippines	378	378	449	18.8%
Bolivia	13	31	35	11.1%
Honduras	22	29	51	76.7%
Guatemala	14	20	18	-9.5%
ITTO Asia Pacific	3 768	4 251	4 685	10.2%
ITTO Latin America	545	716	791	10.5%
ITTO Africa	14	13	27	107.4%
ITTO Producers	4 327	4 980	5 538	11.2%

Source: ITTO, 2002.

on the contrary, have taken a declining path in the long-term, even though a recovery appeared in the meantime, bottoming out in 1998 during the Asian economic crisis. For the past few years, imports of primary tropical timber products have recovered in several countries and continue to surge in China. China remanufactures them into value-added products before re-exporting to industrialized countries.

The shift in tropical trade from primary products towards higher value added products is clear by looking at the figures of the year 1999. ITTO consumer countries imported secondary products from ITTO producers for $5.2 billion, which was 60% of their imports of primary tropical products from same area ($8.6 billion). This has clearly gone up from the 14% share in 1991. ITTO consumer imports of SPWPs from producer countries grew by about 26% between 1996 and 2000, which was faster than imports from all other sources.

Growing outsourcing of semi-finished products and components by the United States furniture industry has been a key driver for this trade. A great number of United States furniture manufacturers have transformed themselves into assembly plants, finishing lines or merely distributors and marketers of outsourced furniture and components from China and other countries, e.g. Brazil, Mexico and the Philippines. While sub-contracting the manufacturing processes to the lower-cost countries, United States firms still capture most of the value-adding potential in design, distribution and marketing functions, which they keep strictly under their control. The manufacturing process itself (particularly with standardized machinery) represents a lower value-added potential and is therefore easily sub-contracted anywhere in the world. Transportation costs of dry semi- or fully machined components are negligible in relation with their value.

China and Viet Nam are currently two of the lowest-cost manufacturing bases in Asia. They have seen a large number of foreign firms either re-locating production or jointly establishing factories in the hope of exploiting the conducive business conditions.

12.5.2 Major tropical exporters

Indonesia, Malaysia, Thailand, Brazil and the Philippines are the major ITTO producer member exporters of SPWPs (table 12.5.1). To put ITTO producer exports into a global perspective, Italy shipped over $5.8 billion worth of SPWP to global markets in 1999, about 15% higher than the combined value of all SPWP exports from all ITTO producer countries.

Although developing countries enjoy some degree of tariff relief under the Generalized System of Preferences (GSP) or other schemes for SPWP in many of the major markets, these benefits have been eroded by general tariff reductions in many countries through successive rounds of multilateral and bilateral trade negotiations. As the tariffs in general become lower, the advantage of being exempted from them under GSP or similar systems becomes smaller.

Tariffs in many countries remain high, however, compared to those for primary products like logs and sawnwood. This is one reason why the contribution of developing countries in total imports of such products by ITTO consumers is still below its potential. The European Union, Japan and the United States apply no import tariffs on SPWP from GSP countries, while rates for most other countries range from 2 to 6% on

TABLE 12.5.2

Exports of secondary products by ITTO producer countries by product group 1999
(Million $)

Exporter	Wooden furniture and parts	Builder's woodwork	Other SPWPs	Cane and bamboo furniture and parts
Indonesia	638	3	244	269
Malaysia	1 026	188	78	19
Thailand	572	40	223	11
Brazil	316	171	96	1
Philippines	119	76	53	131
Bolivia	11	20	0	0
Honduras	15	2	12	0
Guatemala	10	4	6	0
ITTO Asia Pacific	2 369	847	604	430
ITTO Latin America	377	210	127	2
ITTO Africa	8	1	5	0
ITTO Producers	2 754	1 058	736	432

Source: UN COMTRADE, 2002.

the major product categories. The United States, Canada, the European Union and Japan have proposed to eliminate completely all tariffs on wooden furniture by 2005, which will probably further boost SPWP exports from ITTO producer countries. In contrast, many developing countries retain very high tariffs (up to 80%) on SPWP imports.

12.5.3 *Major product categories for tropical exports*

The categories of SPWP for the major ITTO producer exporters show that the main types of SPWP produced and exported vary significantly from country to country (table 12.5.2). The major categories of Indonesia's exports, the largest SPWP producer and exporter, were wooden furniture (38%) and builder's woodwork (32%). Malaysia's SPWP exports are predominantly wooden furniture, about 70% of which is manufactured from rubberwood. Thailand has also linked the development of its furniture industry to its rubberwood resources, with all new sawmill licences now contingent on use of this material. The ban on logging in Thailand's native forests, imposed in 1991, has increased its dependence on imports as well as on former rubber plantations for wood supplies. Thai exports of SPWPs, which declined in 1997 and 1998 during the Asian economic crisis, recovered by 23% in 1999 and by a further 16% in 2000 owing to a boost in the exports of wooden furniture and parts. Thai (and Malaysian) SPWP exports also go mainly to the markets of the United States, Japan and Europe.

Both Thailand and Malaysia have gradually penetrated the higher value markets, particularly in Japan, with their rubberwood furniture. Regulations in both exporting countries favour further processing, restricting exports of raw rubberwood, although the restrictions have been relaxed in Malaysia because of imbalances in domestic supply and demand.

In contrast to its export performance from 1990 to 1995, when exports grew almost four-fold, Brazil's exports of SPWPs stabilized at well under $500 million until 1998, but then surged by 26% to over $584 million in 1999 and by a further 18% to $687 million in 2000. The major categories of Brazilian SPWP exports in 1999 were wooden furniture (54%) and builder's woodwork (29%). Brazil's SPWP exports go mainly to its major markets in the United States, Europe and Argentina.

The major categories of Africa's SPWP exports in 1999 were wooden furniture (58%) and packaging and pallets (and other manufactured products, 36%). African SPWP exports are mainly directed to the European Union (notably the United Kingdom) and United States markets. Asia-Pacific is by far the most important exporting region.

12.6 Engineered wood products markets[7]

This section focuses on the North American market for glulam, I-beams, and LVL. Unfortunately world trade data for engineered wood products (EWPs)

[7] Definitions and descriptions of engineered wood products may be found in the annex under "forest products terminology".

has not improved since the full chapter on "Engineered Wood Products – Production, Trade, Consumption, and Outlook" was published in the Forest Products Annual Market Review, 1999-2000. Most I-beams are still being produced in North America and the majority of structural LVL production takes place in North America. A new development is European glulam imported into the United States but since there are not yet customs classification codes to identify it, there are no reliable values or volumes of the trade (although from industry sources (anecdotal evidence or discussions with distributors) the imports are still small). APA—the Engineered Wood Association has initiated steps, in conjunction with UNECE and the European Union to implement a new harmonized code for glulam, but this could take some time.

Source: APA - the Engineered Wood Association, Regional Production and Market Outlook, APA Economics Report E68, 2002.

12.6.1 Glulam

North American glulam production fell almost 6% in 2001, owing to the slowdown in non-residential activity and exports (table 12.6.1). Developments in technology and product design continue to provide the basis for glulam market share gains over solid sawnwood and beams products. Innovation to obtain better properties is coming from glulam made with high quality southern pine beams made with LVL tension lams[5] (APA, Report E68, 2002). In addition, a new family of I-beam compatible glulam products is beginning to make market inroads in both residential and non-residential construction markets.

TABLE 12.6.1

North American glulam production and forecast, 2000-2003

(1000 m³)

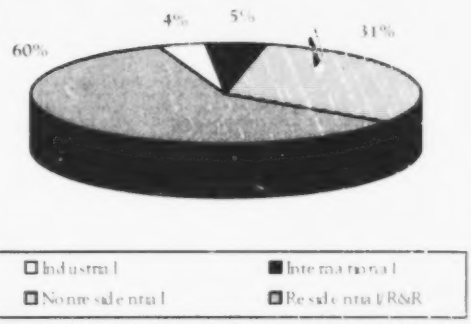
	2000	2001	2002	2003
USA	839.6	790.1	821.9	844.3
Canada	49.5	59.0	59.0	63.7
Total	889.2	849.1	860.8	908.0

Source: APA - the Engineered Wood Association, *Regional Production and Market Outlook*, APA Economics Report E68, 2002.

Glulam end uses depend heavily on residential markets with the next largest segment being non-residential applications (graph 12.6.1). Within the residential sector, support beam, such as garage door

GRAPH 12.6.1

Glulam end uses in North America, 2001



Note: R&R is repair and remodelling.
Source: APA - The Engineered Wood Association, *Regional Production and Market Outlook*, APA Economics Report E68, 2002.

headers is the largest segment as it is increasingly being substituted for solid sawn and built up lumber products (APA 2002). Analysts had expected that North American exports to Japan would pick up as the new Japanese Housing Quality Assurance Law was implemented. However, Japanese domestic glulam and imports of European glulam have made significant inroads. Information from the Japanese Laminators Association indicates that domestic glulam production increased 26% in 2001 to a record 781,600 m³. At the same time, glulam imports from North America declined 8.3% to 71,571 m³ while imports from Europe and Russia increased to record levels for each country (APA 2002).

12.6.2 Wooden I-beams

After declining 3% in 2000, North American I-beam production increased 7% in 2001 to 282 million linear metres (table 12.6.2). APA expects production

TABLE 12.6.2

North American I-beam production and forecast, 2000-2003

(million linear metres)

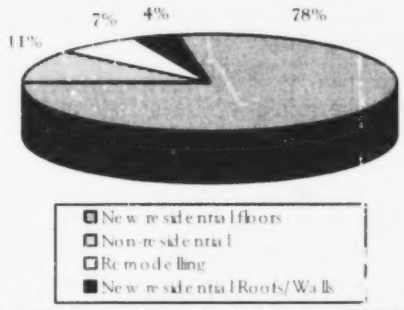
	2000	2001	2002	2003
USA	211	228	241	255
Canada	53	55	58	67
Total	264	282	299	322

Source: APA - the Engineered Wood Association, *Regional Production and Market Outlook*, APA Economics Report E68, 2002.

[5] Tension lams are the external laminations in a glulam beam.

GRAPH 12.6.2

I-beam end uses in North America, 2001



Source: APA - The Engineered Wood Association, *Regional Production and Market Outlook*, APA Economics Report E68, 2002.

to exceed 1 billion linear feet (304 million linear metres) within the next year or two (APA Report E68). Market drivers include the need by builders for more predictable product performance, price stability and the need to reduce labour content and cycle time at the building site. Another driving force is to reduce waste volumes at building sites. For example, recent studies by the National Association of Homebuilders indicate that for every single-family home built in the United States, over 3.5 tons of waste is generated, and 38% of that is wood waste.

New residential floors dominate I-beam usage with 78%, followed by 11% in non-residential applications with the remainder going to new residential wall and roofs and remodelling (graph 12.6.2). The residential floor market will continue to be the main source of growth for several reasons: 1. houses are expected to continue to get bigger (an average of 214 m2 floor area in 2001); 2. Single-family housing maintains its dominant market share (about 75%) over the next decade; and 3. favourable demographics drive shelter demand to historical highs this decade. Although the I-beam share of raised floors was expected to increase from 40% in 2001 to 50% over the following few years as smaller builders discover the advantages big builders saw several years ago, growth rates for I-beam consumption will slow as the market matures by the end of the decade.

There will be a variety of alternative designs, ranging from LVL flanges with OSB webs, to machine stress rated (MSR) and conventional solid sawnwood flanges and more recently, TimberstrandTM or laminated strand lumber[9] (LSL) flanges. LSL is a relatively new EWP similar to OSB, but with longer flakes. These developments are aimed at providing the most efficient I-beam configuration for each application. Most of the trade in I-beams is cross border between Canada and the United States, with about 45% of Canada's production flowing to the United States.

12.6.3 Laminated veneer lumber

Laminated veneer lumber (LVL) production, mostly softwood, totalled 1.7 million m^3 in 2001, an increase of 13% from 2000 (table 12.6.3). The demand for LVL is driven primarily by residential construction activity as 50% is used to construct I-beam flanges and 43% is used in header and beam applications (graph 12.6.3). Future growth will be impacted from the shift by some I-beam producers to solid lumber flanges (primarily MSR sawnwood), while other producers use TimberstrandTM (laminated strand lumber) for the flange in lieu of LVL. The rationale is a better fit of the product properties to the end use application. Therefore, future growth will probably be concentrated in the beams and header market where LVL has strong performance advantages over built-up, softwood dimension lumber[10] and solid sawn beams. Recent market studies by APA show LVL use in U.S. residential construction in 2000 has grown to 21% of all beams, 23% of all garage door headers[11] and 8% of all window, door, and fireplace headers. Another opportunity is the rapidly growing demand for LVL beams in industrial applications.

TABLE 12.6.3

North American LVL production and forecast, 2000-2003

(1000 m^3)

	2000	2001	2002	2003
USA	1 348	1 513	1 637	1 731
Canada	125	156	176	252
Total	1 473	1 669	1 813	1 983

Source: APA - the Engineered Wood Association, *Regional Production and Market Outlook*, APA Economics Report E68, 2002.

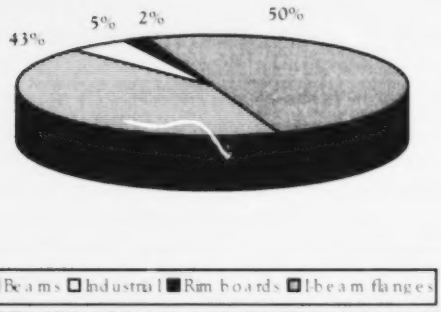
[9] "Lumber" is used synonymously with sawnwood.

[10] Softwood dimension lumber is a North American term referring to sawnwood of specific, generic sizes used in construction, e.g. 2x4s.

[11] Headers are structural beams bridging doors, windows and other openings.

GRAPH 12.6.3

LVL end uses in North America, 2001



Source: APA - The Engineered Wood Association, *Regional Production and Market Outlook*, APA Economics Report E68, 2002.

12.6.4 Outlook for engineered wood products

LVL and I-beams continue to enjoy better growth opportunities than glulam, with expected growth from 2001 to 2003 being 7%, for glulam, 14% for I-beams, and 19% for LVL (APA, 2002). However, North America is expecting weaker near-term demand and supply as recent capacity increments have outstripped demand growth. In fact, Weyerhaeuser, a major manufacturer of I-beams and LVL, recently announced the closure of two EWP facilities – a combined glulam and I-beam plant in Louisiana, and an I-beam plant in Oregon. Consolidation in the forest products industry is being driven by the industry-wide need to reduce overcapacity in many products. The recent Weyerhaeuser and Willamette merger created the world's largest EWP manufacturer. The new company intends to balance capacity to meet customer demand while achieving acceptable margins for shareholders. In essence, EWPs are becoming a commodity in some applications like floor joists. However, the future for EWPs is bright as they provide builders with solutions to problems evolving from skilled labour shortages, the need to reduce construction site waste, and reduce cycle time at the construction site.

12.7 Conclusion

12.7.1 Competition between the UNECE region and emerging exporters

The intense competition between suppliers inside and outside the UNECE region has already led to several casualties. Particularly in the United States, a consolidation process has taken place among furniture makers, whereby only the fittest have lived on. Often the recipe for survival has been flavoured with lay-offs, restructuring and streamlining of operations. Foreign outsourcing, i.e., manufacturing some components abroad, is a key business strategy. In the last year, some of the largest United States furniture manufacturers collapsed, and some of the most famous brands were taken over by others.

More than 50 United States furniture plants had closed by the middle of 2001, and within the next ten years, it is probable that only a few major domestic furniture manufacturers will remain. These will likely be high-end producers who offer customisation and rapid delivery or who specialize in the highest quality (and price) furniture. Other United States furniture companies will more than likely shift their production to Asia and focus on marketing and distribution at home. However, as markets mature, retailers may increasingly source furniture directly from the foreign-based manufacturers, bypassing United States-based companies entirely. Early signs of a similar change are being seen in the kitchen cabinet industry, where many United States cabinet manufacturers are importing doors from overseas.

The years 2000 and 2001 witnessed a race of United States furniture companies into China to find reliable manufacturing partners, and ultimately, to gain a foothold in the Chinese domestic market-in-the-making. As soon as the Chinese distribution structures strengthen, growing imports of up-scale furniture can be expected. The 2008 Olympic games in Beijing will give an additional boost to construction, information technology and the service sectors, with multiplying effects on the consumption of furniture and value-added wood products.

In Europe, the scene has been perhaps less dramatic. However, the German furniture and joinery plants have been struggling over the past few years. This has been partly due to home-market sluggishness, but also associated with import pressure. Sometimes competition comes from plants in other countries belonging to German firms. The strengths of Europe's woodworking industries are generally well known: steady raw material base, technological lead, quality and design, brands, distribution (proximity), clustering and networking. Weaknesses are in labour and raw materials costs and substitution pressures, which result in low profitability of the industry.

In these conditions, EU/EFTA manufacturers have to compete against broadening imports from lower cost sources such as central and eastern European countries and Asia. A common answer to the challenge has been the participation of cost-competitive regions in the

supply chains. In the long term, in order to stay ahead of competitors from the emerging countries, the industry will have to:

- educate the consumers on its products and materials,
- cultivate home-base advantage, and
- invest in product development.

12.7.2 Market drivers and factors of change

The past decade has brought about significant changes in SPWP markets, for example in material compositions of furniture, competitive positions of producer countries and designs and finishes of furniture, as well as SPWP trading and promoting practices, networking and distribution patterns. In particular, the following factors are setting higher criteria for accurate market information on value-added wood products:

1. Growing out-sourcing of semi-finished products and components from developing countries.
2. Tightening environmental regulations and mounting pressure for certification and labelling requirements on furniture (especially in the United States in the next 2 to 3 years).
3. Substitution pressure from new material combinations (wood, natural fibres and synthetics).
4. Higher potential supply of and demand for more diversified products of sustainable plantation woods.
5. Adoption of Internet in export promotion, growing business-to-business electronic commerce, and centralized electronic procurement of operating supplies.
6. Consolidation of the largest distribution channels into cross-continental mega-chains.
7. Gradual lowering of import tariffs, which is sometimes counterbalanced by higher non-tariff barriers on trade.

The exporters from the industrialized world are in most cases better equipped to grasp these challenges and fit them into their competitive strategies. If well understood, these factors could rejuvenate their competitive advantages over developing countries. For tropical and other developing countries, the repercussions of these market drivers need to be better analysed and interpreted within the global trading system.

12.7.3 Implications for UNECE region

The impacts of the changing competitiveness among furniture and other value-added product manufacturers are felt in both the trade and industry communities of UNECE member countries. While impacts for traders and distributors may be primarily positive (bringing in more suppliers, diversifying product ranges, increasing buyers' bargaining power), the domestic manufacturers have come under increasing pressure. Meanwhile, some consumers benefit from lower prices and greater choice.

Fundamentally, the core of the power game is the question of more equitable sharing of income accruing from the consumption of value-added wood products between industrialized and developing countries. Even a short historical review in the world furniture and other secondary product markets implies that successful countries have been alert in responding flexibly to market opportunities, overcoming constraints, and have generally understood the necessity of moving from comparative advantages to competitive advantages.

A superior competitive position obtained from lower costs (labour, raw materials, energy, capital) or economies-of-scale in production no longer automatically confers competitive advantage in most industries because, in this era of globalization, companies can gain access to an optimal blend of inexpensive production factors, or can relocate their factories into regions that offer favourable conditions and costs. The competitive advantage of a company thus arises not only from the availability of low-cost inputs or the sheer size of the company, but rather from superior productivity in using those inputs, wherever they abound on the Earth's face. A practical example is when joint investments on new machinery or production lines are made in a developing country, the investors from the industrialized countries lend their capital against a lease of production time or capacity share of the machinery. Thus they ensure access to low-cost production base with state-of-the-art technology.

Most successful European furniture manufacturers realized a long time ago that their competitive advantages would have to be based on flexible but efficient production with the highest technological quality, superior design, innovative market promotion and swift distribution with minimal stock-keeping. In the developing countries, the example of Malaysia shows a different stance. As analysts like Dr. J. Ratnasingam from Universiti Putra Malaysia have confirmed:

"Until this point of time, the growth and development of the furniture industry in Malaysia has largely been driven by incremental capital inputs and supportive industrial policies. Hence, the contract-manufacturing base in the country has enjoyed economies of scale, leading to the rapid expansion in exports. The benefits of the economies of scale, which

translate into increased production efficiency, industrial networking and the rapid expansion of exporting capacity, are notable. However, the emergence of cheaper furniture producing nations such as China and Viet Nam, threatens the viability of the industry in the future, and the industry needs to shift into greater value added products."[12]

The way forward for Malaysia and other emerging exporters would be to take the necessary steps to move away from the strategy of original equipment manufacturing (OEM) towards original design manufacturing (ODM) and ultimately to original brand manufacturing (OBM). Profiled wood, low-cost furniture and components are typically OEM segments, where high-speed automated moulders and other high-tech machines are used with limited product design ambitions. Therefore, the production factor costs need to be pushed to the minimum (and maintained low) in order to stay competitive. Once this road to success has come to an end (owing to lower-cost competitors) designing more original products becomes a necessity in moving up in the value chain. Copying designs from competitors no longer confers lasting competitive edge. Moving to original design manufacturing is warranted, and it is currently taking hold in the furniture industries of the leading tropical countries. But the remaining third level of sophistication, original brand manufacturing, has remained an elusive target for most of the tropical countries. Marketing of branded furniture is, however, of growing importance in the international markets, and foremost in the highest-value segments. Not surprisingly, this top-market has remained best in the hands of domestic manufacturers in Europe and North America, where branding is part of the business philosophy

Another important implication for the manufacturing industry in Europe and North America is the fact that greatly expanded (albeit rather unconventional) trade flows of primary processed products will continue to emerge. Already today there is a significant flow of high-quality sawnwood and panels from the industrialized countries to those developing countries that sustain a potent, cost-efficient value-added industry with export orientation, or whose wood raw material is scarce. Buy-back of furniture or components often completes this two-way trade.

Interestingly, the central and eastern European producers have started to experiment processing tropical woods for furniture (e.g. Poland). Trade in most value-added wood products with the Middle East region is set to proliferate, as ambitious construction plans are being revealed e.g. in the United Arab Emirates.

On the tropical front, the development of new processing technologies (e.g. MDF with veneer lamination) and growing plantation supplies (e.g. plantation rubberwood, eucalyptus, acacia, teak and pine) are allowing the use of a wider range of species in furniture and other SPWP production. Consequently, steady increases in production and exports from the tropics can be expected. The contribution of SPWP to the forest sectors of ITTO producers and other developing countries will continue to grow rapidly in coming years, with corresponding reductions in production and especially exports of primary tropical timber products. This is likely to cement the firm competition from tropical SPWPs for UNECE region manufacturers. The overall balance of SPWP trade is moving in favour of the Southern hemisphere, where a green "wall of wood" is maturing in plantations of Oceania, Asia and Latin America[13]

12.8 References

Competitiveness of the European Union Woodworking Industries. European Commission. Brussels, 2000.

Tropical Timber Products: Development of Further Processing in the ITTO Producer Countries. ITTO & ITC. Geneva, 2002

Further Processed Wood Products in the 21st Century: Challenges, Opportunities and Solutions for the Developing Countries. Publication under preparation at ITC, Geneva, 2002

Ratnasingam, J. (Unpublished) *The Malaysian Rubberwood Furniture Industry: A Critical Evaluation*. Invited Expert Paper to ITC Executive Forum September 2002.

Regional Production and Market Outlook, APA Economics Report E68, APA - the Engineered Wood Association. 2002.

[12] Source: Ratnasingam, J. (Unpublished) *The Malaysian Rubberwood Furniture Industry: A Critical Evaluation*. Invited expert paper to ITC Executive Forum, September 2002.

[13] Plantation-grown wood fibre, both softwood and roundwood, is expected to expand rapidly from southern hemisphere plantations. For example, in Chile roundwood production is forecast to double in 15 years (see chapter 5) and New Zealand's available wood supply is forecast to increase by 80% in 2010 (see special chapter in the *Review 1998-1999*).

Chapter 13
China emerges as world's fastest growing market for tropical timber products!

Trends in the tropical timber trade[1]

Highlights

- Japan and China are the world's top two importers of tropical timber but these two markets are moving in very different directions: Japan towards a higher degree of processing and China towards sawlogs and veneer logs.
- Many producer countries continued their shift to secondary processed products exports in 2001.
- Tropical log exports fell 11% to 14.4 million m^3 in 2001.
- African exports of processed primary timber products exceeded log exports for the first time in 2001.
- Indonesian exports of sawnwood appear to have risen in 2001 reflecting new estimates based on trading partner reports.
- China's tropical plywood exports, based on imported logs, continue to soar, moving China past Brazil as the world's third largest exporter in 2001.
- Prices for tropical plywood continue to reach new lows due to depressed construction sectors in major importing markets and growing substitution by softwood plywood and other panels, such as OSB and thin MDF.
- Japan, the Republic of Korea and China are still dependent on tropical sources for over 90% of total plywood imports.
- Several ITTO producing countries, e.g., India, Thailand and the Philippines, have become major importers of tropical logs and sawnwood.

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Secretariat introduction

Once again, this analysis is possible thanks to the close cooperation with our colleagues in the International Tropical Timber Organization, specifically Drs. Steven E. Johnson and Michael J. Adams and Ms. Masaki Miyake. Drs. Johnson and Adams are the principal authors of the ITTO *Annual Review and Assessment of the World Timber Situation 2001* and *Market Information Service*, respectively, from which this chapter was drawn. Like our *Review*, ITTO's *Review* is the basis for a market discussion each May, which has also contributed to the updated analysis below.

Readers will note that some of the terminology differs slightly from the rest of the *Review* but the authors have focused the following analysis on the tropical trade developments of the UNECE region. ITTO categorizes its members into producer and consumer countries. Only ITTO member countries are covered, but ITTO membership constitutes 95% of the tropical timber production and trade.

In contrast to previous tropical chapters, production and consumption are not covered here. For a complete analysis of trends in the production and consumption, as well as trade of tropical timber in relation to global timber trends, see the *Annual Review and Assessment of the World Timber Situation 2001* prepared by the International Tropical Timber Organization. The *Review* can be found on the ITTO website (www.itto.or.jp) or by contacting the chapter authors (addresses on the previous page).

13.1 Introduction

In 2001 the global tropical timber sector continued to evolve following the severe market downturn of the late 1990s, with the important markets moving in different directions. China's increasing imports continued to drive the tropical log market, with the country soon set to become the largest importer of primary tropical timber products. However, a notable increase in Russian softwood log imports by China was also observed. Japan's tropical timber imports declined marginally in 2001, continuing a steady erosion of market share. Japan's domestic hardwood plywood production is plummeting, along with tropical log imports. Japan and China are the world's top two importers of tropical timbers, but as can be seen by the above examples, the two markets are moving in very different directions. The contrast between these two timber trade giants, in their consumption patterns, their market structure and their trading style, is having a major impact on the global timber trade, introducing new challenges for manufacturers and traders.

The Japanese domestic timber sector is also undergoing change: the consumption of tropical logs by domestic mills continues to decline while the demand for finished products is growing steadily. From discernable trends, Japanese production of softwood plywood, dependent on Russian and North American logs, will increase, while tropical hardwood plywood production will continue to decline.

China provides some sharp relief to the general story of decline: it is, in fact, the world's fastest-growing market for tropical timber products. The country imports more tropical than temperate timber, with tropical products accounting for about 60% of the value of all primary timber product imports. Total Chinese timber imports have doubled since 1993 led by increased (tropical and temperate) log imports, as noted above. This increase is the result of many factors, including explosive growth in per capita consumption, especially related to construction and housing development, a ban on logging, and a strong currency. Nevertheless, per capita consumption is well below that of the developed economies, suggesting potential for continued growth.

The global average annual consumption of timber per capita is around 0.68 cubic metres, whereas China's is only 0.12 cubic metres, or less than one fifth of the world average. However, consumption rates are rising quickly in cities such as Shanghai, Beijing and Guangzhou and by now may not be far off the world average.

Many tropical timber producer countries continued their shift to secondary processed product exports in 2001, with trade in these products continuing to rise towards the level of primary tropical timber products trade. The contribution of further processing to the wood product industries and related trade will continue to increase in producer countries. Based on past performance, the expected growth rate in exports of added value timber products from tropical countries will result in exports of $5.1 billion in 2001 and by 2003 up to $6.6 billion, with exports of primary products expected to remain stable (or decline slightly) below $10 billion over the same period.

13.2 Export trends

13.2.1 Logs

The contribution of logs to total tropical timber exports of ITTO producers (in terms of both value and roundwood equivalent volume) has fallen dramatically from over 60% in the 1980s to around 25% in 2001 (table 13.2.1). Only Africa continues to export a significant volume of logs compared to processed

Table 13.2.1

Composition of tropical timber exports by producing regions, 1999-2001

(1,000 m³ roundwood equivalent)

	Log production			Log exports			Processed exports			Total exports		
Region	1999	2000	2001	1999	2000	2001	1999	2000	2001	1999	2000	2001
Africa	12 174	13 286	12 554	4 540	5 043	4 244	3 910	4 470	4 831	8 450	9 513	9 075
Asia-Pacific	78 425	79 864	79 852	9 908	10 830	9 982	30 644	31 061	32 640	40 552	41 890	42 622
Latin America	32 267	32 521	33 388	227	224	178	3 509	4 112	4 308	3 736	4 336	4 485
Total	122 865	125 671	125 794	14 675	16 097	14 404	38 063	39 643	41 778	52 738	55 740	56 182

Note: Totals may not sum exactly due to rounding.

Source: ITTO, 2002.

products, as 34% of log production is exported. In 2001 African log exports comprised 48% of total roundwood equivalent export volume. Despite the continued significance of African log exports, 2001 marked the first time that the roundwood equivalent volume of exports of processed products exceeded that of logs. The Asia-Pacific region is rapidly replacing log exports with the export of processed products, spurred by Indonesian plywood exports and Malaysian exports of sawnwood, veneer and plywood. Asian log exports made up 26% of total Asian export volume in 2001 (13% of log production). Latin American tropical log exports are a small fraction of both production and total exports. Total roundwood equivalent export volume as a percentage of log production increased from 12% to 13% in Latin America, from 52% to 53% in Asia, and from 69% to 72% in Africa during the period from 1999 to 2001. Total ITTO producer member exports (roundwood equivalent) increased by 7%, from 52.7 million m^3 to 56.2 million m^3, for the same period, owing to the recovery of African and Asian log exports and increased sawnwood exports by all three regions.

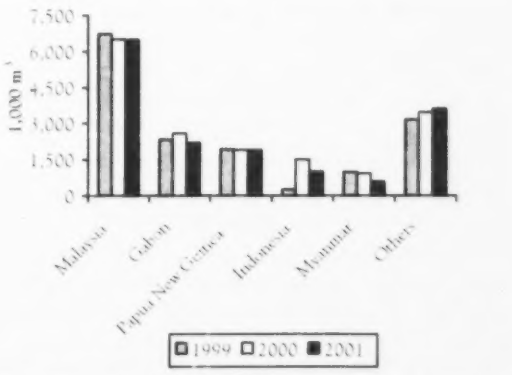
Log exports by producer members decreased by 11% in 2001 to 14.4 million m^3. Malaysia continues to dominate the trade in tropical logs with 6.5 million m^3 exported in 2001, constituting 45% of ITTO producer member exports (graph 13.2.1). Malaysia's major log customers are China (including Taiwan Province of China), Japan and India.

Papua New Guinea is the third largest tropical log exporter, with estimated 2001 exports of almost 1.9 million m^3, down by 2% from 1999 levels. Papua New Guinea's log exports remain far below the pre-Asian crisis level of almost 3 million m^3 per year. The bulk of its log exports go to Japan and the Republic of Korea. The Chinese market for its logs grew in 2001, mainly for lower grades. Log exports by Myanmar, the fifth largest log exporter in 2001, decreased by almost 40% in that year. Myanmar's main trading partners are India, Thailand and China.

Africa supplies the majority of the remainder of world tropical hardwood log exports. Gabon is the region's largest exporter (and ITTO's second largest), but the Congo, Liberia, Cameroon, the Central African Republic and Côte d'Ivoire also exported substantial quantities of logs in 2001. Gabon's exports fell 15% to under 2.2 million m^3 in 2001 as log export restrictions were implemented. Cameroon imposed limitations on exports of some species as far back as 1999, leading its exports to plunge by 38% in 2000 and a further 40% in 2001 to under 381,000 m^3. Ghana, a former top log exporter, banned exports of tropical hardwood logs in 1996. Liberia's civil war (which led to drastic decreases in official log production and exports for most of the 1990s) was resolved in 1998, leading to a resumption of log exports. Liberia's exports jumped by 206% in 2000 (to 637,000 m^3), with most of these logs destined for Europe, but in 2001 fell back to 409,000 m^3.

GRAPH 13.2.1

Major tropical log exporters, 1999-2001



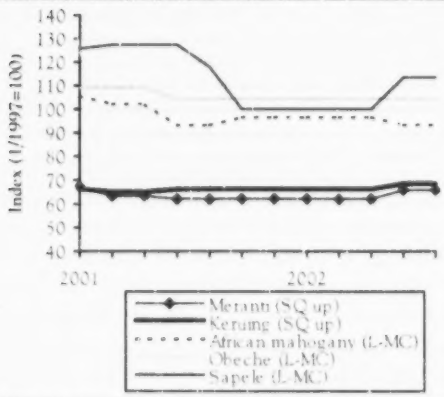
Source: ITTO, 2002.

13.2.2 Tropical log prices

After the sharp drop during the Asian crisis of 1997 and 1998, prices of most species of Asian logs have been recovering slowly (graph 13.2.2). Most have traded at real (1990) prices between $120 and $160/m³ from the end of 1998 through 2001, still a long way from 1996 and 1997 price levels. Kerung prices were relatively stable in 2001, trading at around $159/m³ at the close of the year. Meranti logs were trading at $164/m³ in the third quarter of 2000, when export markets (particularly China) increased orders, but declined steadily from the last quarter of 2000 and were trading at only $140/m³ in late 2001.

GRAPH 13.2.2

Tropical log price trends, 2001-2002



Note: FOB prices, SQ up is sawmill quality, L-MC is Loyale Merchant. Prices are from January 2001 through May 2002.
Source: ITTO, 2002.

Real FOB prices for most important species of African log exports were generally declining but fluctuated widely during the 2000-2001 period. Having followed an upward trend since mid-1999, real prices for African mahogany (acajou) peaked in mid-2000 at around $260/m³, before declining sharply during most of the last half of 2000. In late 2000 African mahogany prices were at $190/m³, a record low over the past decade, mainly as a result of a weakening of the French franc and the euro compared to the United States dollar. African mahogany prices rose gradually during the first quarter of 2001 and firmed at around $222/m³ before declining again during the second and third quarters to $187/m³, a new record low owing to lower demand in France and a perception in the European markets of high stocks in log yards. Prices remained relatively stable at this level to the end of 2001.

After peaking at $317/m³ in early 2000 as a result of a mid-1999 Cameroonian log export ban on several species, real prices for sapelli also declined sharply during most of the year to $256/m³ in November 2000, close to the lowest price for this species over the past decade. Sapelli prices rose gradually through the first quarter of 2001, firmed at around $304/m³ and fluctuated around that level during the second and third quarter of 2001. Sapelli prices dropped steeply at the end of 2001 to around $230 owing to depressed demand in Europe.

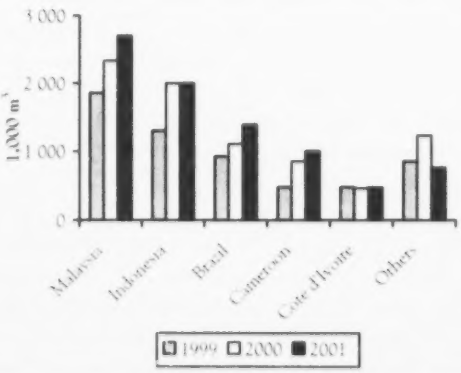
13.2.3 Sawnwood

Malaysia continues to dominate the trade in tropical sawnwood, with the 2.7 million m³ exported in 2001 constituting 31% of total ITTO producer member exports (graph 13.2.3). Malaysia's sawnwood customers are primarily Japan, Thailand, the Netherlands, the Republic of Korea and the large Chinese market (including Hong Kong Special Administrative Region and Taiwan Province of China).

Export estimates for Indonesian sawnwood have been adjusted to take into account trading partner reports. Based on this new information, Indonesian exports of sawnwood rose to 2 million m³ in 2001, a 54% increase over the figure reported in 2000. Indonesia's major sawnwood market is China, but its reported trade with China in 2001 was far smaller than China's reported imports. Cameroon's sawnwood exports have also grown sharply in recent years, jumping almost 80% in 2000 and a further 18% in 2001, reaching 1 million m³ as mills were able to benefit from restrictions on log exports. In addition to the top five exporters shown in the graph, Thailand

GRAPH 13.2.3

Major tropical sawnwood exporters, 1999-2001



Source: ITTO, 2002

and Ghana both exported over 200,000 m^3 of tropical sawnwood in 2001.

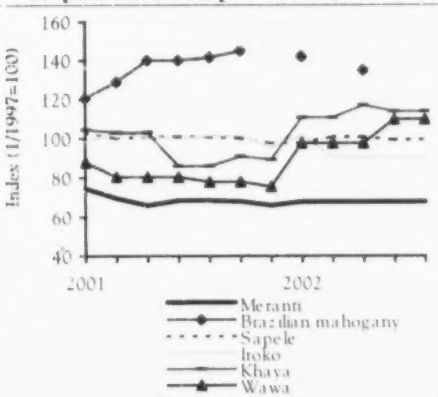
ITTO consumer countries exported 494,000 m^3 of tropical sawnwood in 2001, primarily (77%) from the European Union countries which accounted for 380,000 m^3 of the total. Belgium is the main European Union tropical sawnwood exporter with 190,000 m^3 in exports in 2001, followed by the Netherlands (60,000 m^3). The United States also exports substantial quantities of sawnwood produced from imported tropical logs, with 62,000 m^3 shipped in 2001.

13.2.4 Tropical sawnwood prices

African sawnwood prices were declining for several important species including mahogany (=cajou or khaya) and wawa (obeche) in 2000-2001 (graph 13.2.4). After peaking at a record high of \$634/m^3 in April 2000 as a result of a boost in European Union furniture sector imports, real prices for mahogany (one of the most valuable African sawnwood export species) were declining for most of 2000, reaching \$538/m^3 by year-end. After a period of relative stability, prices of wawa rose slightly in the second half of 1999 and early 2000 to reach \$330/m^3 but declined gradually to \$258/m^3 in late 2000 as competition from lower-priced Asian sawnwood, temperate hardwoods and softwoods increased. Wawa sawnwood prices rose to \$295/m^3 in

GRAPH 13.2.4

Tropical sawnwood price trends, 2001-2002



Note: FOB prices. No data after March 2002 for Brazilian mahogany due to harvesting and export ban.
Source: ITTO, 2002.

early 2001, before declining to around \$235/m^3 by the end of the year.

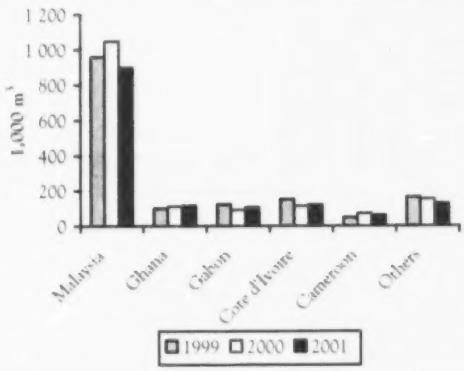
After reaching record highs in 1994, declining through 1995, firming in 1996 and then falling sharply in the second half of 1997 and first half of 1998 (during the Asian economic turmoil), prices of dark red meranti sawnwood firmed at around \$420/m^3 until the end of 2000. Prices of Malaysian meranti sawnwood declined steadily throughout 2001 as a result of market uncertainty and competition in some importing countries with increased sawnwood supply from Africa (mainly Cameroon). In contrast to other species, Brazilian mahogany sawnwood rose in 2001 and was trading at year-end at \$1,420/m^3, a record high. The price of mahogany is expected to increase further in 2002 owing to strong demand and limits on supply as a result of stricter forest management and export controls in Brazil.

13.2.5 Veneer

ITTO producer country veneer exports dropped 8% in 2001 to 1.6 million m^3. Malaysia continues to be the main veneer exporter, with exports of 900,000 m^3 in 2001 accounting for 63% of total ITTO producer member exports (graph 13.2.5). Malaysian exports are

GRAPH 13.2.5

Major tropical veneer exporters, 1999-2001



Source: ITTO, 2002.

mainly directed to China, the Republic of Korea, Taiwan Province of China, the Philippines and Japan.

Côte d'Ivoire was the second largest tropical veneer exporter in 2001 with exports of 120,000 m^3, an increase of 6% from 2000. Côte d'Ivoire's veneer markets are the European Union (mainly Germany, Italy, Spain and France) and the United States. Ghana overtook Gabon as the third largest ITTO tropical veneer exporter beginning in 2000 and exports grew steadily to 116,000 m^3 in 2001. Cameroon's veneer exports decreased by 15% to 60,000 m^3 in 2001.

The European Union accounted for 107,000 m^3 of total consumer country tropical veneer exports of 121,000 m^3 in 2001. France, Belgium, Spain, Germany and the Netherlands are the largest European Union

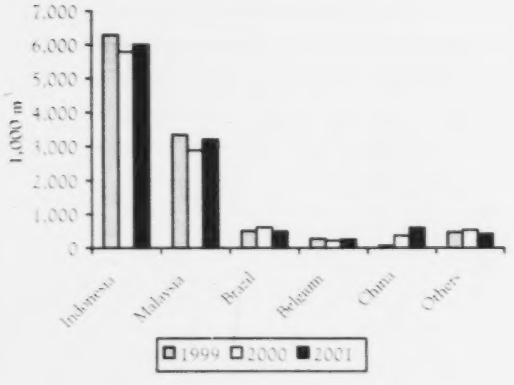
tropical veneer exporters. Consumer country exports of tropical veneer are often of much higher aggregate value than those from producer countries, although prices of individual species of tropical veneers are not regularly tracked by ITTO or others.

13.2.6 *Plywood*

Tropical plywood exports by ITTO producer member countries increased in 2001 to slightly over 10 million m^3, but were still well below the volumes exported prior to the Asian economic crisis of 1998. Indonesia remains the main tropical plywood exporter with 6 million m^3 exported in 2001, constituting 59% of total ITTO producer member exports (graph 13.2.6). However, Indonesia's proportion of the total has fallen from a high of 80% in 1992.

GRAPH 13.2.6

Major tropical plywood exporters, 1999-2001



Source: ITTO, 2002.

Malaysia is Indonesia's major competitor in the tropical plywood trade. Malaysian exports decreased by 14% to 2.9 million m^3 in 2000, but increased to 3.2 million m^3 in 2001. Malaysia was a major supplier of the Chinese plywood market and has been hard hit by that country's switch to log imports. Malaysia's rapid growth in plywood exports up to 1998 (when exports approached 4 million m^3) was due to the construction of new plywood mills in Sabah and Sarawak. These two eastern Malaysian states account for almost all of the country's plywood exports. Malaysia's exports were mainly to Japan, the Republic of Korea and the United States in 2001. Latin American plywood exports declined by 18% in 2001 to 586,000 m^3 owing to a 19% fall in Brazil's exports to 493,000 m^3. The United States and the European Union (mainly the United Kingdom, Germany and Belgium) are the major markets for Brazil's hardwood plywood. Africa's plywood exports remained relatively minor at 231,000 m^3 in 2001, but have grown rapidly in the past 5 years owing to increased exports from Côte d'Ivoire, Gabon and Ghana.

ITTO consumer country exports of tropical plywood rose 29% to almost 1.3 million m^3 in 2001, led by a steady increase of exports from China, with customs data suggesting that it replaced Brazil as the world's third largest tropical plywood exporter in 2001. The European Union also exported over half a million m^3 of tropical plywood in 2001.

The plywood trade in China has developed at a frantic pace. Imports have plummeted from around 1.5 million m^3 in 1997 (they had been as high as 2.3 million m^3 in 1993) to just 650,000 m^3 in 2001. In contrast, exports have defied gravity, leaping from less than 100,000 m^3 in 1993 to almost 1 million m^3 in 2001, with the majority of this tropical. According to customs data, Chinese plywood was exported to the following main markets in 2001: Republic of Korea – 206,000 m^3 (representing 21.3%), Hong Kong – 169,000 m^3 (17.5%), Japan – 121,000 m^3 (12.5%), the United States – 92,000 m^3 (9.5%) and Taiwan Province of China – 85,000 m^3 (8.8%).

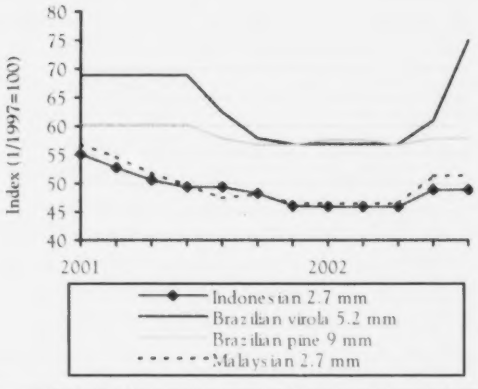
13.2.7 *Tropical plywood prices*

Prices for tropical plywood continue to reach new lows owing to depressed construction sectors in major importing markets and growing substitution by softwood plywood and other panels. After reaching record highs in 1996, declining through 1997 and the first half of 1998, and firming slightly in the second half of 1998 and 1999, prices of Indonesian BB/CC moisture resistant grade plywood stabilised in early 2000 at about \$388/m^3 and \$203/m^3 for 2.7 millimetre and 6-18 millimetre thicknesses, respectively. This stabilization was helped by a stronger yen and an active demand for thin plywood in China. Indonesian plywood export prices started declining steadily from mid 2000 and were trading at around \$221/m^3 and \$159/m^3 for the above thicknesses, respectively, in late 2001, record lows for these products (graph 13.2.7). These real price levels were only about 45-50% of the highs observed in 1996. Asian plywood prices have not recovered as a result of:

- Flat construction sectors in Japan and other southeast Asian consumers, as well as in Germany.
- A recent change in import tariff structures in China, which favours log over plywood imports.
- Increasing substitution by softwood plywood in many consuming countries, and strong competition from other wood-based panels.

GRAPH 13.2.7

Tropical plywood price trends, 2001-2002



Note: FOB prices.
Source: ITTO, 2002.

Malaysian plywood prices have closely tracked those for Indonesian products, as shown by the 2001 price trends (graph 13.2.7).

Brazilian plywood prices have also undergone significant declines but not as dramatic or consistent as their Asian competitors. Prices of white virola rebounded in late 2000 to $248/m^3 as volume shortages took effect and rose slowly through most of 2001, before declining to $231/m^3 in late 2001. Prices for Brazilian pine plywood (9+ millimetre), included here for comparison purposes, were less severely affected during the 1997 to 1998 market turbulence than Brazil's tropical exports, but prices are still at less than 60% of the pre-crisis levels.

13.3 Import trends

Of the ITTO consumer members, China, including Hong Kong Special Administrative Region and Taiwan Province of China, appears to be the most dependent on tropical imports, with a significant proportion of their substantial log, sawnwood, veneer and plywood imports of tropical origin (table 13.3.1). Major importers are defined here as those with imports of at least 100,000 m^3 of one or more tropical products. Unsurprisingly, given the dominance of tropical plywood in international plywood trade, most of the countries in the table have a fairly high dependence on tropical plywood imports, with the Republic of Korea, Japan and China dependent on tropical sources for over 90% of total imports (although this dependence is decreasing in the first two countries).

The products in which each country qualifies as a major importer are identified with the table in bold. Only China and Taiwan Province of China qualify as major importers of tropical timber under this criterion in all primary product categories.

Tropical sawnwood has a low market share in most non-tropical countries, with only China dependent on it for half or more of its sawnwood imports. Only Hong

Table 13.3.1

Tropical proportion of total imports by major ITTO importers, 2001

Proportion (%)

Consumer members	*Logs*	*Sawnwood*	*Veneer*	*Plywood*
Belgium	1.5	**17.6**	62.5	**78.7**
China	**45.8**	**52.4**	**91.0**	**92.2**
France	**39.4**	**11.5**	43.4	**29.7**
Germany	**4.1**	2.8	22.7	**16.3**
Hong Kong S.A.R.	**63.9**	**17.3**	18.8	**73.5**
Italy	**7.2**	**3.9**	13.9	14.5
Japan	**15.4**	**6.7**	40.9	**90.2**
Netherlands	20.0	**12.0**	16.7	**34.8**
Portugal	**37.4**	**18.5**	25.0	13.8
Rep. of Korea	**13.5**	**31.6**	**68.3**	**90.8**
Spain	**4.4**	**10.3**	42.3	4.9
Taiwan, P.O.C.	**76.0**	**18.4**	**85.9**	**85.1**
United Kingdom	3.2	**3.9**	25.0	**57.5**
United States	0.0	**0.7**	5.9	**63.5**
Producer Members				
Brazil	56.4	**99.0**	98.6	0.0
India	**86.5**	9.1	0.0	50.0
Malaysia	**94.7**	**98.9**	5.0	71.4
Philippines	**58.8**	**77.5**	**82.4**	75.0
Thailand	**86.7**	**87.0**	71.6	0.3

Note: Bold indicates qualification as a major importer
Source: ITTO, 2002

Kong Special Administrative Region and Taiwan Province of China among major consumers imported a greater proportion of tropical than non-tropical logs in 2001. In contrast to consumer countries, most of the major ITTO producer country importers depend on tropical imports for the majority of their imported wood needs. This is changing, however, with, for example, India, the Philippines and Thailand now sourcing substantial quantities of log imports from non-tropical areas.

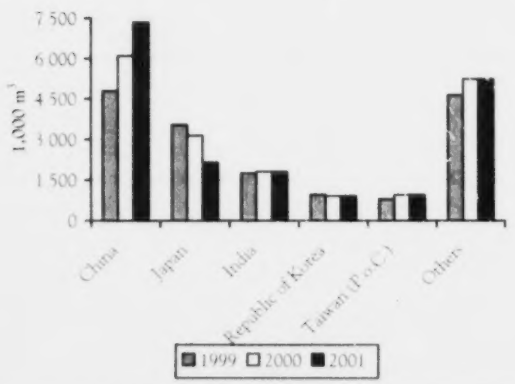
13.3.1 Logs

Total imports of tropical hardwood logs by ITTO members remained stable at 18.1 million m^3 in 2001, about 16% (or 2.9 million m^3) greater than total log exports by all members. This gap between imports and reported exports could be explained by greater supplies from non-ITTO members, undocumented and illegal trade, forecasting errors, or most likely a combination of these. Differences between reported ITTO imports and exports is at least partially made up by legitimate log exports from non-members Equatorial Guinea and the Solomon Islands, with exports averaging about 400,000 m^3 per year each. Other non-member tropical log exporters are less significant and include Bangladesh (average annual exports around 100,000 m^3), Laos (80,000 m^3), Mozambique (50,000 m^3), Madagascar (40,000 m^3) and Viet Nam (30,000 m^3).

China overtook Japan in 1999 as the world's largest importer of tropical logs and maintained this position in 2001 when it imported about 7.3 million m^3 (up 20% from 2000), thus consolidating it as ITTO's largest tropical log importer with over 40% of total ITTO imports (graph 13.3.1). China's growing economy, a ban on domestic harvesting and a zero tariff on log imports were the main driving factors for this sharp rise. China's tropical log imports have soared more than five-fold in the last five years, with Malaysia, Gabon, Papua New Guinea and Indonesia being the main sources. China's import of non-tropical logs has also expanded rapidly, with Russia providing the bulk of total imports of about 7 million m^3 in 2001. Official Chinese statistics do not include Taiwan Province of China nor Special Administrative Regions Hong Kong and Macao, so the figures for these are based on trading partner reports and other unofficial sources.

GRAPH 13.3.1

Major tropical log importers, 1999-2001



Source: ITTO, 2002.

Since 1998, China has progressively phased out tropical plywood imports in favour of logs. The high levels of imports of low-cost plywood from Indonesia and Malaysia started to seriously undermine the competitive position of domestic manufacturers and many mills were forced to cut production, lay-off workers and even close. By removing import tariffs on logs (and by enforcing laws against plywood smuggling) this situation was addressed effectively. When the tariffs on logs were removed, local manufacturers were able to profitably use imported logs to fill the gap in log supplies created as a result of the drastic cuts in domestic log harvests as part of the country's new forest protection regulations. If China's log imports continue to grow as expected, China will soon replace Japan as the world's top log importer of both tropical and temperate logs.

Japan is the second largest ITTO tropical log importer, with imports of just over 2.1 million m^3 in 2001, down 32% from 2000 levels owing to its contracting economy, reduced supplies from Malaysia and an increasing reliance on softwood logs. Two thirds of Japanese demand for tropical logs continued to be met primarily by output from Malaysia in 2001, with logs from Papua New Guinea accounting for about one quarter of total imports and most of the remainder from Africa (mainly Gabon and Cameroon). Russia continued as Japan's major log supplier, with imports of over 5 million m^3 in 2001. Larch is the preferred species for plywood manufacture, and with prices below those of the cheapest tropical logs, it appears likely to gain further market share.

India is the third largest importer of tropical logs, at 1.8 million m^3 in 2001, mostly from Malaysia and Myanmar but with an increasing component of African logs. The Republic of Korea is also a major ITTO log importer, with almost 912,000 m^3 in 2001 as its economy continued recovering, with its major suppliers Papua New Guinea (35%) and Malaysia (35% of total imports, down from 71% in 1994). The Republic of Korea's imports of logs from Africa were 251,000 m^3 in 1995, but the ban on exports from Ghana (the Republic's main African supplier in that

year) led to a sharp drop in imports from that continent. The Republic of Korea's current main African suppliers are Gabon and Cameroon, from which it now imports only minor quantities. A significant portion of the Republic's "other" tropical log supply is sourced from the Solomon Islands.

The European Union countries imported 2.4 million m^3 of tropical logs in 2001 (down 5% from 2000), most of which came from African producers. France remains the largest of the European Union log importers; its imports remained stable at 822,000 m^3 in 2001. The bulk of France's tropical log supplies comes from Gabon, Republic of Congo, Liberia and Cameroon. Portugal and Italy are also major European log importers, each with over 410,000 m^3 of log imports in 2001.

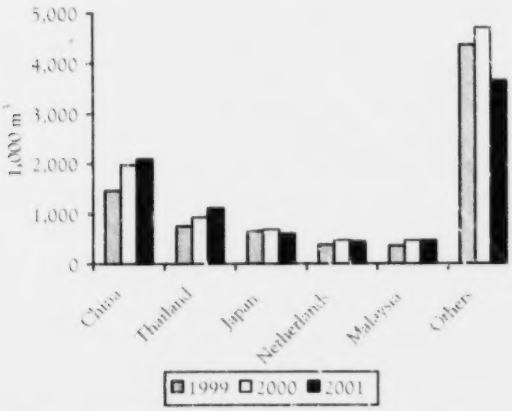
Several ITTO producing countries have become major importers of logs, indicating the extent of wood shortages in their domestic forest sectors. India (1,800,000 m^3), Malaysia (718,000 m^3), Thailand (464,000 m^3), and the Philippines (325,000 m^3) were the major ITTO producer country importers of tropical logs in 2001, reflecting resource scarcity and increased timber demand in these countries. Total imports of tropical logs by ITTO producing members, however, declined by 4% to just over 3.5 million m^3 in 2001.

13.3.2 *Sawnwood*

Total ITTO imports of tropical sawnwood decreased by 1.1% to 8.4 million m^3 in 2001. With 2001 imports of 2.1 million m^3, China is by far the top ITTO sawnwood importer (graph 13.3.2). China's imports surged 6% in 2001. China's tropical sawnwood imports are mainly from Indonesia (47%) and Malaysia

GRAPH 13.3.2

Major tropical sawnwood importers, 1999-2001



Source: ITTO, 2002.

(25%). The combined imports of China and Taiwan Province of China accounted for 38% of ITTO consumer imports in 2001. Thailand imported 1.1 million m^3 (up 20%) in 2001 as its large furniture and secondary processing industries continued to recover. Both Thailand's and Japan's tropical sawnwood imports are primarily from Malaysia (69% and 49%, respectively). Japan also imported substantial quantities of sawnwood from Indonesia (39%) in 2001. Japan remained ITTO's third largest tropical sawnwood importer in 2001, with imports decreasing by 12% to 605,000 m^3. Japanese imports of tropical sawnwood have fallen almost by half since 1996, while its imports of softwood lumber (primarily from Canada and increasingly from the Nordic Countries) remained at over 8 million m^3 in 2001.

The Netherlands, Malaysia, Spain, Belgium, France, the United States, the United Kingdom and Taiwan Province of China, each with over 300,000 m^3 of tropical sawnwood imports in 2001, were also major importers. Imports by the Netherlands, Belgium, the United Kingdom and Taiwan Province of China were primarily from Malaysia and (to a lesser extent) Indonesia, while Malaysia's were from Indonesia, although no corresponding trade flow was reported by Indonesia. The tropical sawnwood market is the most diversified of all primary tropical timber products, with the five largest importers accounting for only half of total ITTO imports in 2001.

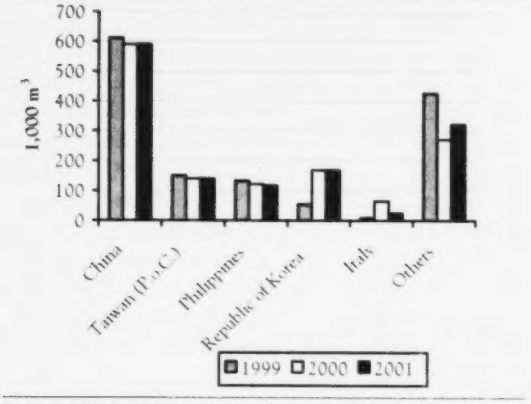
Total tropical sawnwood imports by European Union countries declined by almost 11% in 2001 to 2.5 million m^3, primarily as a result of decreased imports by Belgium, France and the United Kingdom. As stated above, Malaysia and Indonesia are the main sources for European Union imports, accounting for over half of the total. Côte d'Ivoire, Cameroon, Brazil and Ghana supplied virtually all of the remainder of European Union imports. The Netherlands is the largest importer of tropical sawnwood in the European Union, absorbing 450,000 m^3 in 2001. France (385,000 m^3) and Spain, Belgium and the United Kingdom (at 300,000 m^3 each) were other major European Union tropical sawnwood importers in 2001.

13.3.3 *Veneer*

Total ITTO imports of tropical veneer were stable at almost 1.4 million m^3 in 2001 due to steady imports of China and Taiwan Province of China's remaining stable (at 589,000 m^3 and 140,000 m^3 respectively) in 2001 (graph 13.3.3). The Republic of Korea's imports (168,000 m^3) also remained stable in 2001. Four out of the five top veneer importers are Asian countries. Imports by Asian countries are primarily sourced from Malaysia, while the majority of European imports are

GRAPH 13.3.3

Major tropical veneer importers, 1999-2001



Source: ITTO, 2002.

from African producers (mainly Côte d'Ivoire, but increasingly from Gabon and Ghana as well). The European Union absorbed 237,000 m^3 of tropical veneer in 2001, around one-fifth of total ITTO imports. Japan's tropical veneer imports decreased by 6% to 45,000 m^3 in 2001.

13.3.4 Plywood

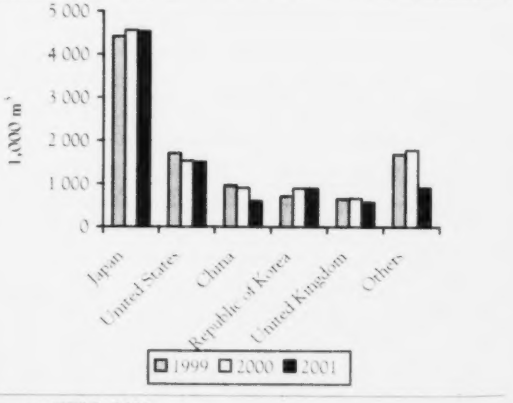
Total ITTO imports of tropical plywood declined by 5% to 10.2 million m^3 in 2001. The majority of all tropical plywood imports are sourced from Indonesia and Malaysia (60% and 39% respectively in 2000 for the top importer, Japan). Japan continues to replace domestic hardwood plywood production with softwoods, imported plywood (tropical and non-tropical) and substitutes like OSB and MDF. Its tropical imports decreased slightly by 1% in 2001, to 4.5 million m^3, due to its flat construction sector. The general trend towards increasing plywood imports by Japan is at least partially due to its difficulty in obtaining tropical logs for domestic production in the face of competition from China. Low prices also made imported plywood more attractive than domestic production in 2000 and 2001. Japan is now importing growing quantities of low-priced tropical plywood from China.

The United States was ITTO's second major plywood importer in 2001, with 1.5 million m^3, a drop of 2% from 2000 levels (graph 13.3.4). Of the United States tropical plywood imports, 43% was from Indonesia, 23% from Malaysia and most of the rest from Latin America. The Republic of Korea was ITTO's third largest tropical plywood importer in 2001 with 890,000 m^3. Korean tropical plywood imports have rebounded back to pre-crisis levels as its construction sector has recovered. Indonesia has traditionally supplied most of the Republic's plywood imports, but Malaysia has gradually increased its share from 18% in 1995 to over one third in 2001. China dropped to fourth largest tropical plywood importer with 600,000 m^3 in 2001. As noted above, Chinese imports have fallen to less than one third of 1998 levels as authorities have moved to increase domestic plywood production from imported logs to boost employment and offset reduced domestic log supplies. Tariffs on imported plywood are 15%, compared to zero for logs.

European Union imports of tropical plywood totalled just under 1.6 million m^3 in 2001, a 7% decrease from 2000 levels owing to declines in the United Kingdom, the Netherlands and Germany. European Union imports are led by the United Kingdom and the Netherlands. Most of the European Union's tropical plywood also came from Indonesia and Malaysia, with Brazil and inter-European trade also playing a fairly large role in many countries' imports. China continued to export small but growing amounts of tropical plywood to the European Union, particularly to its largest plywood importer, the United Kingdom. Taiwan Province of China (530,000 m^3) was also a substantial tropical plywood importer in 2001.

GRAPH 13.3.4

Major tropical plywood importers, 1999-2001



Source: ITTO, 2002.

13.4 Tropical timber trends

This concluding section briefly examines some important trends in the tropical timber sector that will continue to be felt in 2002 and beyond.

13.4.1 Chinese plywood exports

As noted in the section on plywood, China has converted from a major importer to a major exporter of this product in the space of a few years. First quarter 2002 Chinese customs statistics confirm that imports of plywood and veneer continued to fall. Imports of plywood fell from 194,000 m^3 in the first quarter last year to just 124,000 m^3 this year, a decline of 37%. On the other hand, exports of plywood continued to surge, with first quarter 2002 plywood exports up by 31% over the corresponding period of 2001.

China's plywood exports are largely made up of tropical species and rely on logs and veneer imported from Malaysia, Indonesia and other tropical countries in Asia and Africa. With exports of plywood likely to exceed 1 million m^3 this year, China has become a serious competitor in the global plywood market, especially in East Asia. Tropical plywood producers will be seeing more of their traditional markets under attack by low-priced Chinese exports in future.

13.4.2 Forest area changes

FAO's *Global Forest Resource Assessment 2000*, released in late 2001, shows that net tropical deforestation (i.e., deforestation minus forest extension, excluding plantations) slowed from 12.8 million hectares per year during the 1980s to 11.5 million hectares per year in the 1990s. Separating tropical countries into ITTO members and others shows that the annual rate of deforestation in ITTO member countries fell from 0.6 to 0.5% between the two decades, while that of other tropical countries increased, from 0.7 to 0.9%. While this trend is due to many factors (e.g. forests are generally more important in ITTO member countries, many other tropical countries have more dry zone forests which are more easily destroyed, and income and growth are generally lower in other tropical countries than in ITTO members), it is nonetheless encouraging.

The 2000 FAO *Forest Resource Assessment* also shows that global forest plantations increased by almost 12 million hectares per year in the 1990s, compared to less than 4 million hectares per year in the previous decade, with half of this phenomenal growth in Asia (primarily India, China and Japan). ITTO producer members established 1.7 million hectares per year of plantations during the 1980s, rising to 3.2 million annually in the 1990s. This compares to only 400,000 hectare per year by other tropical countries, and 1.8 million by non-tropical developing countries such as China. ITTO producer countries had 59 million hectares of plantations in 2000, approaching 5% of their total natural forest area.

With growth in area planted increasing by over 10% per year, plantations look set to play an ever-increasing role in the forest sector of tropical countries, especially in the development of capacity for secondary processed wood products (see chapter 12).

13.4.3 Illegal logging and trade and certification

The problem of illegal logging and trade in timber products has garnered substantial international exposure in recent years. While such problems can be found to some degree in almost all countries, the scope of illegal logging and its potentially devastating impact on forest resources in several tropical countries ensures that these countries will remain the focus of international attention. ITTO has been involved in several activities to combat these problems in member countries, most notably through a decision taken at the end of 2001 calling for more project funding for forest law enforcement and an innovative study that is currently under way to compare trading partner discrepancies with a view to identifying illegal trade. A dozen countries, including all major importers and exporters of tropical timber, have volunteered to participate in this study.

An integral part of any serious effort to combat illegal logging and trade is reliable auditing of forest operations and chain-of-custody verification. ITTO is supporting several country initiatives to develop credible forest auditing frameworks and has recently approved a set of guidelines for the development of such frameworks. Several tropical countries are also developing national certification schemes based on forest management auditing frameworks and ITTO's criteria and indicators. In 2001, both Malaysia's National Timber Certification Council and Indonesia's Eco-labeling Institute began steps to market certified tropical forest products with their own labels. While some countries are in negotiations with international accreditation bodies such as the Forest Stewardship Council (which has to date primarily awarded certificates in temperate forests), it appears unlikely that any one scheme will gain prominence in the tropics. The proliferation of national or regional schemes is therefore likely to continue, and will call for a framework for mutual recognition between schemes. ITTO has been active in attempting to facilitate agreement on such a framework, and will continue to support the efforts of tropical countries to monitor and report on the sustainable management of their forests.

Annexes

1. Apparent consumption tables

1. Roundwood apparent consumption
2. Sawn softwood apparent consumption
3. Sawn hardwood apparent consumption
4. Particle board apparent consumption
5. Plywood apparent consumption
6. Fibreboard apparent consumption
7. Chemical woodpulp apparent consumption
8. Paper and paperboard apparent consumption
9. Graphic papers apparent consumption
10. Sanitary and household papers apparent consumption
11. Packaging materials apparent consumption
12. Other paper and paperboard apparent consumption

2. Components of wood products groups

1. Roundwood flow chart
2. Wood-based panels flow chart
3. Wood pulp flow chart
4. Paper and paperboard flow chart

3. Forest products terminology

1. General terms and transactions
2. Primary products
3. Secondary processed wood products
4. Engineered wood products

4. Countries in the UNECE region and its subregions

5. Sources of information used in the *Forest Products Annual Market Review*

6. Special chapters in former *Forest Products Annual Market Reviews*

7. Some facts about the Timber Committee

8. UNECE/FAO publications

9. Reader survey

ANNEX TABLE 1

Roundwood apparent consumption
(1,000 m³)

	1998	1999	2000	2001	m³ per 1000 inhabitants 2001	% change 2000 to 2001
Austria	18 467	20 125	20 781	20 189	2 500.2	-2.8
Belgium & Luxembourg	6 781	...	...	...	...	...
Belgium	...	6 942	7 353	7 280	709.7	-1.0
Luxembourg	...	426	681	681	1 539.7	0.0
Denmark	2 074	2 023	3 040	2 501	469.0	-17.7
Finland	62 290	63 170	63 733	63 799	12 321.1	0.1
France	34 265	41 742	42 012	35 522	597.5	-15.4
Germany	36 454	35 792	51 702	36 646	446.9	-29.1
Greece	1 969	2 497	2 448	2 448	230.4	0.0
Iceland	4	4	4	4	13.6	0.0
Ireland	2 287	2 730	2 696	2 478	645.1	-8.1
Italy	14 990	16 443	15 600	13 145	228.6	-15.7
Liechtenstein	13	8	24	22	671.8	-8.3
Netherlands	1 221	1 239	1 232	1 266	79.4	2.7
Norway	11 198	10 926	10 990	10 748	2 394.9	-2.2
Portugal	10 087	9 854	11 603	11 386	1 134.9	-1.9
Spain	18 440	17 666	21 430	21 559	540.0	0.6
Sweden	68 446	67 793	75 256	73 240	8 291.6	-2.7
Switzerland	3 558	3 874	5 788	2 096	292.3	-63.8
United Kingdom	7 372	7 510	7 233	7 617	127.9	5.3
EU/EFTA	299 915	310 763	343 605	312 627	803.8	-9.0
Albania	28	230	447	459	145.8	2.7
Bosnia and Herzegovina	0	0	0	0	0.0	...
Bulgaria	2 975	4 176	4 529	3 769	479.1	-16.8
Croatia	3 231	3 265	3 421	3 546	761.8	3.7
Cyprus	35	36	23	21	27.0	-5.9
Czech Republic	12 114	12 222	13 365	12 865	1 253.9	-3.7
Estonia	2 484	3 068	4 825	8 900	6 463.3	84.5
Hungary	3 069	4 804	4 662	4 856	489.7	4.2
Israel	309	329	220	166	27.0	-24.5
Latvia	5 860	10 402	10 087	10 155	4 220.8	0.7
Lithuania	4 176	4 062	4 358	4 472	1 212.1	2.6
Malta	1	1	4	4	11.1	0.0
Poland	23 116	24 468	26 410	25 840	669.8	-2.2
Romania	11 490	12 102	12 634	12 337	551.1	-2.3
Slovakia	4 933	4 163	3 730	2 973	550.3	-20.3
Slovenia	2 102	2 233	2 445	2 375	1 196.7	-2.8
The fYR of Macedonia	697	825	1 091	749	366.7	-31.3
Turkey	18 921	19 040	18 666	17 091	252.7	-8.4
Yugoslavia	2 819	2 614	3 344	2 457	233.1	-26.5
OTHER EUROPE	98 360	108 041	114 260	113 037	556.0	-1.1
Belarus	5 081	5 877	5 296	5 291	521.5	-0.1
Republic of Moldova	403	78	89	87	20.3	-1.7
Russian Federation	74 281	115 473	126 578	123 896	856.4	-2.1
Canada	181 939	197 119	181 563	180 297	5 813.2	-0.7
United States	482 709	487 350	495 260	476 987	1 668.2	-3.7
NORTH AMERICA	664 647	684 469	676 823	657 284	2 073.8	-2.9

Source: UNECE/FAO TIMBER database, 2002.

ANNEX TABLE 2

Sawn softwood apparent consumption
(1,000 m³)

	1998	1999	2000	2001	m³ per 1000 inhabitants 2001	% change 2000 to 2001
Austria	4 623	5 034	5 468	5 153	638.2	-5.7
Belgium & Luxembourg	2 069	...	...	...	...	...
Belgium	...	1 743	1 841	1 803	175.8	-2.0
Luxembourg	...	129	134	134	302.5	0.0
Denmark	4 010	4 752	3 571	4 239	794.9	18.7
Finland	4 187	4 660	5 178	4 762	919.6	-8.0
France	8 922	9 174	9 525	9 609	161.6	0.9
Germany	16 885	17 351	17 247	16 025	195.4	-7.1
Greece	465	662	648	648	61.0	0.0
Iceland	66	66	94	82	291.8	-12.8
Ireland	978	1 006	1 145	1 179	306.8	2.9
Italy	5 925	6 230	6 993	6 598	114.7	-5.6
Liechtenstein	...	...	...	...	...	...
Netherlands	2 854	2 832	2 935	2 934	184.2	0.0
Norway	2 752	2 356	2 493	2 575	573.8	3.3
Portugal	748	805	793	776	77.4	-2.2
Spain	7 150	4 038	4 659	4 659	116.7	0.0
Sweden	4 033	3 686	5 136	4 961	561.6	-3.4
Switzerland	1 501	1 551	1 659	1 476	205.9	-11.0
United Kingdom	8 621	8 885	9 503	9 423	158.3	-0.8
EU/EFTA	75 789	74 960	79 021	77 036	198.1	-2.5
Albania	15	21	53	53	16.9	0.0
Bosnia and Herzegovina	...	...	...	...	...	...
Bulgaria	176	128	107	95	12.1	-11.2
Croatia	218	225	225	225	48.2	0.0
Cyprus	82	82	49	69	87.6	41.0
Czech Republic	2 027	1 940	2 300	2 189	213.4	-4.8
Estonia	175	411	618	785	569.8	27.0
Hungary	724	789	1 024	1 024	103.3	0.0
Israel	368	383	334	334	54.1	0.0
Latvia	579	718	812	877	364.7	8.1
Lithuania	588	570	642	655	177.6	2.1
Malta	14	14	14	14	35.7	0.0
Poland	2 973	2 801	2 966	2 580	66.9	-13.0
Romania	247	352	401	465	20.8	15.8
Slovakia	133	182	194	282	52.1	45.2
Slovenia	327	174	128	99	49.9	-22.7
The fYR of Macedonia	60	78	152	86	42.3	-43.1
Turkey	2 283	2 470	3 253	2 400	35.5	-26.2
Yugoslavia	...	...	454	369	35.1	-18.5
OTHER EUROPE	10 988	11 337	13 725	12 602	63.3	-8.2
Belarus	1 305	1 186	677	726	71.5	7.2
Republic of Moldova	82	57	57	57	13.3	0.0
Russian Federation	10 984	10 514	10 091	10 404	71.9	3.1
Canada	12 622	15 044	14 924	11 985	386.4	-19.7
United States	88 254	92 294	91 674	91 634	320.5	0.0
NORTH AMERICA	100 876	107 338	106 598	103 619	326.9	-2.8

Source: UNECE/FAO TIMBER database, 2002.

ANNEX TABLE 3

Sawn hardwood apparent consumption
(1,000 m³)

	1998	1999	2000	2001	m³ per 1000 inhabitants 2001	% change 2000 to 2001
Austria	292	322	335	332	41.1	-0.9
Belgium & Luxembourg	778	...	...	...	...	...
Belgium	...	481	508	528	51.4	3.9
Luxembourg	...	29	40	40	89.6	0.0
Denmark	259	161	153	209	39.2	36.6
Finland	106	105	153	153	29.6	0.1
France	3 072	2 980	2 966	3 104	52.2	4.7
Germany	1 494	1 874	1 526	1 427	17.4	-6.5
Greece	72	148	112	112	10.5	0.0
Iceland	3	3	0	0	0.0	...
Ireland	159	141	151	155	40.2	2.3
Italy	2 796	2 793	2 809	2 590	45.0	-7.8
Liechtenstein	...	...	...	...	...	...
Netherlands	621	701	777	777	48.7	-0.1
Norway	52	56	53	87	19.4	64.2
Portugal	544	559	647	606	60.4	-6.4
Spain	1 968	1 902	2 155	2 155	54.0	0.0
Sweden	352	368	340	340	38.5	0.0
Switzerland	253	250	227	176	24.5	-22.5
United Kingdom	596	613	747	778	13.1	4.1
EU/EFTA	13 417	13 486	13 699	13 568	34.9	-1.0
Albania	19	20	43	43	13.5	0.0
Bosnia and Herzegovina	...	...	...	...	...	...
Bulgaria	44	-70	-42	-36	-4.6	...
Croatia	122	136	136	136	29.2	0.0
Cyprus	19	17	25	16	20.9	-34.3
Czech Republic	357	360	364	369	36.0	1.4
Estonia	21	26	-52	15	10.7	...
Hungary	-19	68	90	90	9.0	0.0
Israel	21	102	120	120	19.5	0.0
Latvia	88	228	146	157	65.2	7.4
Lithuania	103	116	115	97	26.2	-15.8
Malta	8	8	8	8	20.4	0.0
Poland	578	613	575	671	17.4	16.9
Romania	413	554	679	765	34.2	12.6
Slovakia	137	49	206	234	43.3	13.7
Slovenia	113	128	164	184	92.8	12.0
The fYR of Macedonia	8	15	19	9	4.5	-52.1
Turkey	1 958	2 101	2 759	2 647	39.1	-4.1
Yugoslavia	...	...	178	150	14.2	-15.6
OTHER EUROPE	3 989	4 471	5 533	5 675	29.7	2.6
Belarus	740	365	490	496	48.8	1.2
Republic of Moldova	58	59	58	58	13.6	0.0
Russian Federation	3 747	2 169	2 166	1 874	13.0	-13.5
Canada	802	796	820	804	25.9	-2.0
United States	28 836	28 978	28 664	26 774	93.6	-6.6
NORTH AMERICA	29 638	29 774	29 484	27 578	87.0	-6.5

Source: UNECE/FAO TIMBER database, 2002.

ANNEX TABLE 4

Particle board apparent consumption
(1,000 m^3)

	1998	1999	2000	2001	m^3 per 1000 inhabitants 2001	% change 2000 to 2001
Austria	684	816	898	841	104.2	-6.3
Belgium & Luxembourg	734	..	...	...	...	...
Belgium	...	1 018	730	739	72.0	1.2
Luxembourg	...	29	29	29	65.6	0.0
Denmark	706	734	865	896	168.0	3.6
Finland	300	295	306	268	51.7	-12.5
France	2 954	3 004	3 296	2 881	48.5	-12.6
Germany	9 500	9 417	9 867	8 548	104.2	-13.4
Greece	329	401	404	404	38.0	0.0
Iceland	15	15	19	16	56.9	-15.8
Ireland	164	240	181	174	45.3	-3.9
Italy	3 390	3 340	3 423	3 388	58.9	-1.0
Liechtenstein	...	...	..	...	...	...
Netherlands	643	668	668	624	39.2	-6.5
Norway	268	273	228	240	53.5	5.2
Portugal	408	471	431	493	49.1	14.3
Spain	2 361	2 964	3 578	3 578	89.6	0.0
Sweden	599	615	880	892	101.0	1.4
Switzerland	396	386	408	368	51.3	-9.8
United Kingdom	3 235	3 264	3 254	3 285	55.2	1.0
EU/EFTA	26 684	27 950	29 465	27 665	71.1	-6.1
Albania	...	...	...	...	...	...
Bosnia and Herzegovina	..	...	...	...	...	...
Bulgaria	119	35	126	130	16.5	3.2
Croatia	79	89	89	89	19.1	0.0
Cyprus	40	40	50	46	58.5	-6.7
Czech Republic	327	478	542	585	57.0	7.9
Estonia	96	102	26	56	40.9	114.0
Hungary	377	401	439	439	44.3	0.0
Israel	124	138	155	155	25.1	0.0
Latvia	42	34	46	54	22.6	18.2
Lithuania	108	81	101	124	33.6	23.2
Malta	8	7	7	7	17.2	0.0
Poland	2 615	2 263	2 736	2 730	70.8	-0.2
Romania	264	295	298	377	16.8	26.7
Slovakia	262	303	16	91	16.8	468.8
Slovenia	219	239	354	432	217.9	22.0
The fYR of Macedonia	166	171	190	186	91.1	-2.0
Turkey	1 517	1 627	2 071	1 628	24.1	-21.4
Yugoslavia	105	104	100	118	11.2	18.7
OTHER EUROPE	6 469	6 405	7 345	7 249	37.0	-1.3
Belarus	342	251	196	250	24.6	27.2
Republic of Moldova	31	31	31	31	7.3	0.0
Russian Federation	1 709	2 057	2 430	2 854	19.7	17.4
Canada	1 873	2 941	2 820	2 761	89.0	-2.1
United States	24 631	28 300	29 431	29 873	104.5	1.5
NORTH AMERICA	26 504	31 241	32 251	32 634	103.0	1.2

Source: UNECE/FAO TIMBER database, 2002.

ANNEX TABLE 5

Plywood apparent consumption
(1,000 m³)

	1998	1999	2000	2001	m³ per 1000 inhabitants 2001	% change 2000 to 2001
Austria	91	99	74	7	0.8	-90.8
Belgium & Luxembourg	227	...	...	...	...	...
Belgium	...	186	189	139	13.5	-26.5
Luxembourg	...	...	...	...	...	...
Denmark	278	168	222	319	59.8	43.7
Finland	186	160	197	190	36.7	-3.4
France	678	668	675	662	11.1	-2.0
Germany	1 367	1 225	1 296	1 171	14.3	-9.6
Greece	29	31	31	31	2.9	0.0
Iceland	1	1	2	2	7.1	0.0
Ireland	84	140	122	122	31.8	0.0
Italy	659	678	726	761	13.2	4.8
Liechtenstein	...	...	...	...	...	...
Netherlands	477	510	510	520	32.7	2.1
Norway	69	72	74	76	16.9	2.7
Portugal	35	42	56	53	5.3	-4.9
Spain	352	467	484	484	12.1	0.0
Sweden	170	192	225	208	23.5	-7.6
Switzerland	140	146	151	141	19.7	-6.6
United Kingdom	956	950	1 012	1 099	18.5	8.6
EU/EFTA	5 799	5 734	6 047	5 986	15.4	-1.0
Albania	...	...	...	...	...	...
Bosnia and Herzegovina	...	...	...	...	...	...
Bulgaria	22	23	12	31	3.9	158.3
Croatia	8	9	9	9	1.9	0.0
Cyprus	7	7	21	35	43.9	62.4
Czech Republic	46	44	47	84	8.2	78.7
Estonia	10	29	38	41	29.7	6.5
Hungary	49	30	31	31	3.1	0.0
Israel	117	160	175	175	28.3	0.0
Latvia	14	28	32	39	16.2	23.3
Lithuania	26	18	21	25	6.9	23.7
Malta	5	4	4	4	8.9	0.0
Poland	149	199	220	193	5.0	-12.1
Romania	37	32	27	31	1.4	16.1
Slovakia	77	-93	98	145	26.8	48.0
Slovenia	30	51	35	39	19.6	12.5
The fYR of Macedonia	2	2	2	1	0.4	-61.5
Turkey	63	44	74	37	0.5	-50.0
Yugoslavia	...	...	13	11	1.0	-18.3
OTHER EUROPE	656	587	858	930	4.7	8.4
Belarus	61	47	23	44	4.3	93.0
Republic of Moldova	1	1	1	1	0.1	0.0
Russian Federation	395	414	548	594	4.1	8.5
Canada	1 568	1 494	1 533	1 670	53.9	9.0
United States	18 599	19 333	18 983	18 647	65.2	-1.8
NORTH AMERICA	20 167	20 827	20 516	20 317	64.1	-1.0

Source: UNECE/FAO TIMBER database, 2002.

ANNEX TABLE 6

Fibreboard apparent consumption
(1,000 m³)

	1998	1999	2000	2001	m³ per 1000 inhabitants 2001	% change 2000 to 2001
Austria	80	111	111	149	18.5	35.2
Belgium & Luxembourg	321	...	...	...	...	...
Belgium	...	317	647	616	60.0	-4.7
Luxembourg	...	...	...	...	...	...
Denmark	149	140	186	220	41.3	18.3
Finland	158	176	188	171	33.1	-8.9
France	640	654	814	816	13.7	0.1
Germany	1 643	1 987	2 079	1 738	21.2	-16.4
Greece	334	341	335	335	31.5	0.0
Iceland	4	5	7	6	20.6	-14.7
Ireland	100	127	163	159	41.4	-2.5
Italy	1 304	1 181	1 263	1 445	25.1	14.4
Liechtenstein	...	...	...	...	...	...
Netherlands	425	427	427	318	20.0	-25.4
Norway	134	57	102	99	22.0	-3.2
Portugal	160	221	281	271	27.0	-3.8
Spain	1 146	1 082	1 087	1 087	27.2	0.0
Sweden	200	251	274	248	28.1	-9.5
Switzerland	175	304	306	291	40.6	-5.0
United Kingdom	1 288	1 232	1 457	1 649	27.7	13.1
EU/EFTA	8 261	8 613	9 727	9 617	24.8	-1.1
Albania	...	0	0	0	0.1	0.0
Bosnia and Herzegovina	...	...	...	...	...	...
Bulgaria	55	19	195	241	30.7	23.7
Croatia	10	13	13	13	2.9	0.0
Cyprus	21	17	20	30	38.5	48.7
Czech Republic	92	96	135	190	18.5	40.7
Estonia	42	41	57	58	42.0	0.9
Hungary	24	31	36	36	3.7	0.0
Israel	141	162	147	108	17.5	-26.6
Latvia	11	17	14	14	5.7	0.8
Lithuania	35	30	49	46	12.3	-6.4
Malta	14	15	15	15	38.0	0.0
Poland	829	871	946	990	25.7	4.7
Romania	43	60	33	58	2.6	75.8
Slovakia	183	79	49	82	15.2	67.3
Slovenia	88	82	81	77	38.7	-5.2
The fYR of Macedonia	3	5	15	15	7.1	-4.9
Turkey	430	379	677	392	5.8	-42.1
Yugoslavia	32	35	22	44	4.1	99.5
OTHER EUROPE	2 053	1 953	2 505	2 409	12.1	-3.8
Belarus	-16	68	44	43	4.2	-3.6
Republic of Moldova	...	1	1	1	0.3	0.0
Russian Federation	499	560	715	779	5.4	9.0
Canada	574	553	782	513	16.5	-34.4
United States	7 584	7 886	9 075	9 039	31.6	-0.4
NORTH AMERICA	8 158	8 439	9 857	9 552	30.1	-3.1

Source: UNECE/FAO TIMBER database, 2002.

ANNEX TABLE 7

Chemical woodpulp apparent consumption
(1,000 m.t.)

	1998	1999	2000	2001	m^3 per 1000 inhabitants 2001	% change 2000 to 2001
Austria	1 420	1 336	1 455	1 367	169.3	-6.1
Belgium & Luxembourg	560	...	...	...	...	...
Belgium	...	518	596	649	63.2	8.9
Luxembourg	...	0	0	0	0.0	...
Denmark	47	53	44	39	7.3	-11.4
Finland	5 215	5 261	5 592	5 036	972.6	-9.9
France	3 398	3 430	3 709	3 483	58.6	-6.1
Germany	3 994	3 660	4 233	3 917	47.8	-7.5
Greece	126	129	127	127	11.9	0.0
Iceland	0	0	0	0	0.0	...
Ireland	17	20	17	17	4.4	0.0
Italy	3 020	3 083	2 958	3 112	54.1	5.2
Liechtenstein	...	...	...	...	...	...
Netherlands	832	629	436	435	27.3	-0.2
Norway	538	539	524	474	105.6	-9.5
Portugal	730	701	894	998	99.5	11.6
Spain	1 519	1 518	1 707	1 707	42.7	0.0
Sweden	4 979	5 028	5 548	5 237	592.9	-5.6
Switzerland	430	451	448	417	58.2	-6.9
United Kingdom	1 529	1 560	1 689	1 482	24.9	-12.3
EU/EFTA	28 355	27 916	29 976	28 496	73.3	-4.9
Albania	...	...	...	...	...	...
Bosnia and Herzegovina	...	...	...	...	...	...
Bulgaria	42	30	31	27	3.5	-12.8
Croatia	4	4	4	4	0.8	0.0
Cyprus	3	3	2	3	3.2	35.6
Czech Republic	367	368	391	401	39.1	2.6
Estonia	42	50	54	56	40.7	2.8
Hungary	170	175	164	164	16.6	0.0
Israel	107	110	124	124	20.0	0.0
Latvia	0	0	0	0	0.0	-36.4
Lithuania	3	1	2	4	1.0	143.0
Malta	0	0	0	0	0.9	0.0
Poland	845	885	959	995	25.8	3.8
Romania	157	135	180	168	7.5	-6.8
Slovakia	229	421	508	554	102.5	9.1
Slovenia	205	199	230	224	113.1	-2.5
The fYR of Macedonia	3	2	3	3	1.4	0.0
Turkey	510	513	529	455	6.7	-14.0
Yugoslavia	21	32	35	36	3.4	2.3
OTHER EUROPE	2 709	2 929	3 215	3 216	16.4	0.0
Belarus	71	86	88	82	8.1	-6.2
Republic of Moldova	...	-1	-1	-1	-0.1	...
Russian Federation	1 718	2 282	2 617	2 662	18.4	1.7
Canada	4 079	3 992	3 949	3 406	109.8	-13.8
United States	49 952	49 500	49 279	46 368	162.2	-5.9
NORTH AMERICA	54 031	53 492	53 229	49 774	157.0	-6.5

Source: UNECE/FAO TIMBER database, 2002.

ANNEX TABLE 8

Paper and paperboard apparent consumption
(1,000 m.t.)

	1998	1999	2000	2001	m³ per 1000 inhabitants 2001	% change 2000 to 2001
Austria	1 985	2 136	2 395	2 379	294.6	-0.7
Belgium & Luxembourg	2 940	...	...	...	...	...
Belgium	...	2 728	2 644	2 589	252.4	-2.1
Luxembourg	...	63	28	28	62.9	0.0
Denmark	1 311	1 328	1 175	1 641	307.7	39.7
Finland	2 027	2 043	2 223	1 949	376.4	-12.3
France	10 743	10 955	11 394	10 926	183.8	-4.1
Germany	17 073	17 766	19 087	18 543	226.1	-2.9
Greece	1 078	1 084	879	879	82.7	0.0
Iceland	32	6	24	24	85.2	-1.7
Ireland	446	429	420	420	109.3	0.0
Italy	9 592	10 461	10 201	9 882	171.8	-3.1
Liechtenstein	...	...	...	...	...	...
Netherlands	3 894	4 164	3 911	3 911	245.5	0.0
Norway	736	731	785	613	136.6	-21.9
Portugal	1 057	1 053	1 189	1 251	124.7	5.2
Spain	5 462	8 047	6 676	6 676	167.2	0.0
Sweden	1 888	1 867	2 509	2 419	273.9	-3.6
Switzerland	1 590	1 467	1 576	1 566	218.5	-0.6
United Kingdom	11 413	11 871	11 495	11 862	199.2	3.2
EU/EFTA	73 267	78 199	78 611	77 559	199.4	-1.3
Albania	50	8	10	10	3.1	0.0
Bosnia and Herzegovina	...	...	...	...	...	...
Bulgaria	201	196	211	239	30.4	13.3
Croatia	478	488	488	488	104.9	0.0
Cyprus	51	34	54	55	70.0	3.2
Czech Republic	782	803	849	929	90.5	9.4
Estonia	49	52	66	74	53.9	12.4
Hungary	659	659	779	779	78.5	0.0
Israel	609	637	713	713	115.5	0.0
Latvia	85	43	92	101	41.9	9.5
Lithuania	89	83	94	105	28.6	12.3
Malta	34	27	27	27	69.1	0.0
Poland	2 088	2 268	2 409	2 396	62.1	-0.5
Romania	346	319	372	396	17.7	6.5
Slovakia	489	703	823	886	164.0	7.7
Slovenia	309	212	170	180	90.4	5.3
The fYR of Macedonia	41	45	47	44	21.3	-7.3
Turkey	2 075	2 142	2 756	2 016	29.8	-26.9
Yugoslavia	161	242	253	346	32.8	36.5
OTHER EUROPE	8 595	8 962	10 212	9 783	49.1	-4.2
Belarus	227	259	308	310	30.6	0.6
Republic of Moldova	...	15	15	15	3.6	0.0
Russian Federation	2 128	2 848	3 415	3 925	27.1	15.0
Canada	6 871	8 370	9 118	9 132	294.4	0.2
United States	91 866	95 870	93 685	88 708	310.2	-5.3
NORTH AMERICA	98 738	104 240	102 803	97 840	308.7	-4.8

Source: UNECE/FAO TIMBER database, 2002.

ANNEX TABLE 9

Graphic papers apparent consumption
(1,000 m.t.)

	1998	1999	2000	2001	m^3 per 1000 inhabitants 2001	% change 2000 to 2001
Austria	767	857	922	1 025	127.0	11.2
Belgium & Luxembourg	1 386	...	...	...	...	...
Belgium	...	1 408	1 382	1 367	133.3	-1.1
Luxembourg	...	56	46	46	103.7	0.0
Denmark	686	662	696	1 107	207.6	59.1
Finland	1 259	1 276	1 406	1 352	261.1	-3.8
France	5 211	5 413	5 595	5 314	89.4	-5.0
Germany	8 721	8 945	9 674	9 220	112.4	-4.7
Greece	295	368	382	382	36.0	0.0
Iceland	15	6	6	6	22.4	0.0
Ireland	201	215	167	167	43.5	0.0
Italy	3 539	4 029	4 201	4 022	69.9	-4.3
Liechtenstein	...	...	...	...	...	...
Netherlands	1 858	1 742	1 965	1 965	123.4	0.0
Norway	462	454	544	377	84.0	-30.7
Portugal	449	466	550	681	67.9	23.8
Spain	2 299	2 339	2 461	2 461	61.7	0.0
Sweden	694	790	1 141	1 020	115.5	-10.6
Switzerland	931	927	991	914	127.5	-7.7
United Kingdom	6 497	6 788	6 472	7 196	120.9	11.2
EU/EFTA	35 271	36 741	38 602	38 624	99.3	0.1
Albania	14	...	...	...	...	...
Bosnia and Herzegovina	...	...	...	...	...	...
Bulgaria	40	62	77	83	10.6	7.8
Croatia	61	69	69	69	14.8	0.0
Cyprus	23	5	23	26	32.6	11.1
Czech Republic	348	341	350	399	38.9	14.0
Estonia	25	29	36	33	23.9	-7.6
Hungary	337	328	406	406	40.9	0.0
Israel	261	259	324	324	52.5	0.0
Latvia	44	15	43	43	17.8	-1.2
Lithuania	37	40	42	44	11.9	4.3
Malta	13	4	4	4	10.7	0.0
Poland	929	1 047	1 014	994	25.8	-2.0
Romania	128	87	149	153	6.8	2.6
Slovakia	240	551	592	626	115.9	5.7
Slovenia	125	89	66	56	28.4	-14.1
The fYR of Macedonia	17	16	17	15	7.2	-12.6
Turkey	732	806	1 207	643	9.5	-46.7
Yugoslavia	...	...	48	61	5.8	25.7
OTHER EUROPE	3 375	3 748	4 467	3 978	20.3	-11.0
Belarus	...	41	75	96	9.5	28.1
Republic of Moldova	...	3	3	3	0.6	0.0
Russian Federation	651	910	1 102	1 175	8.1	6.6
Canada	3 099	4 321	3 924	3 915	126.2	-0.2
United States	38 876	40 080	40 374	37 094	129.7	-8.1
NORTH AMERICA	41 975	44 401	44 298	41 009	129.4	-7.4

Source: UNECE/FAO TIMBER database, 2002.

ANNEX TABLE 10

Sanitary and household papers apparent consumption
(1,000 m.t.)

	1998	1999	2000	2001	m³ per 1000 inhabitants 2001	% change 2000 to 2001
Austria	113	109	114	114	14.1	0.1
Belgium & Luxembourg	96	...	...	...	...	...
Belgium	...	100	98	99	9.7	0.6
Luxembourg	...	-19	-18	-18	-40.9	...
Denmark	2	3	3	3	0.6	0.0
Finland	109	124	124	118	22.8	-4.6
France	533	593	632	656	11.0	3.8
Germany	936	979	1 050	971	11.8	-7.5
Greece	126	126	69	69	6.5	0.0
Iceland	...	...	...	...	...	...
Ireland	4	-2	-4	-4	-1.0	...
Italy	813	1 103	1 093	1 105	19.2	1.2
Liechtenstein	...	...	...	...	...	...
Netherlands	175	185	145	145	9.1	0.0
Norway	14	13	15	16	3.6	6.7
Portugal	64	64	66	67	6.6	0.8
Spain	416	435	451	451	11.3	0.0
Sweden	236	208	224	211	23.9	-5.6
Switzerland	108	82	208	205	28.5	-1.9
United Kingdom	835	863	831	857	14.4	3.1
EU/EFTA	4 580	4 966	5 100	5 063	13.2	-0.7
Albania	...	...	...	...	...	...
Bosnia and Herzegovina	...	...	...	...	...	...
Bulgaria	...	21	9	11	1.4	22.2
Croatia	211	207	207	207	44.6	0.0
Cyprus	...	...	7	8	9.8	4.2
Czech Republic	32	37	43	47	4.6	9.3
Estonia	0	0	0	1	0.4	81.3
Hungary	47	48	48	48	4.8	0.0
Israel	...	48	45	45	7.2	0.0
Latvia	1	0	0	1	0.2	36.4
Lithuania	11	8	8	9	2.3	10.8
Malta	...	...	...	...	...	...
Poland	113	120	114	122	3.1	6.5
Romania	39	35	37	41	1.8	10.5
Slovakia	73	47	73	95	17.6	30.1
Slovenia	50	56	59	58	29.4	-0.7
The fYR of Macedonia	...	3	3	3	1.4	-11.3
Turkey	73	84	97	85	1.3	-12.4
Yugoslavia	...	...	9	13	1.2	37.6
OTHER EUROPE	649	712	760	792	4.0	4.2
Belarus	...	4	1	2	0.2	28.6
Republic of Moldova	...	...	...	...	...	...
Russian Federation	101	107	107	126	0.9	17.8
Canada	547	574	605	646	20.8	6.8
United States	6 044	6 330	6 301	6 405	22.4	1.7
NORTH AMERICA	6 591	6 904	6 905	7 051	22.2	2.1

Source: UNECE/FAO TIMBER database, 2002.

ANNEX TABLE 11

Packaging materials apparent consumption
(1,000 m t.)

	1998	1999	2000	2001	m^3 per 1000 inhabitants 2001	% change 2000 to 2001
Austria	991	1 052	1 227	1 099	136.1	-10.4
Belgium & Luxembourg	1 277	...	...	...	...	...
Belgium	...	1 115	1 056	1 022	99.6	-3.2
Luxembourg	...	18	11	11	25.4	0.0
Denmark	549	575	407	439	82.3	7.9
Finland	567	514	558	350	67.6	-37.2
France	4 828	4 778	5 023	4 824	81.1	-4.0
Germany	6 341	6 722	7 173	7 209	87.9	0.5
Greece	610	581	418	418	39.4	0.0
Iceland	...	...	...	...	...	...
Ireland	217	192	232	232	60.4	0.0
Italy	4 865	3 980	4 312	4 229	73.5	-1.9
Liechtenstein	...	...	...	...	...	...
Netherlands	1 808	2 211	1 824	1 824	114.5	0.0
Norway	286	289	256	185	41.2	-27.7
Portugal	515	486	536	466	46.4	-13.1
Spain	2 348	4 833	3 307	3 307	82.8	0.0
Sweden	830	752	1 056	1 103	124.9	4.4
Switzerland	516	353	384	444	61.9	15.6
United Kingdom	3 672	3 582	3 476	3 279	55.1	-5.7
EU/EFTA	30 220	32 033	31 257	30 441	78.3	-2.6
Albania	...	...	...	...	...	...
Bosnia and Herzegovina	...	...	...	...	...	...
Bulgaria	...	99	110	124	15.8	12.7
Croatia	135	138	138	138	29.6	0.0
Cyprus	22	23	21	21	26.0	-3.7
Czech Republic	378	405	418	440	42.9	5.4
Estonia	22	18	28	39	28.2	40.8
Hungary	250	257	293	293	29.5	0.0
Israel	270	304	317	317	51.4	0.0
Latvia	30	26	44	51	21.1	15.8
Lithuania	41	33	41	50	13.5	23.0
Malta	...	...	...	...	...	...
Poland	891	874	1 049	1 051	27.2	0.2
Romania	171	171	174	182	8.1	4.9
Slovakia	127	-12	35	50	9.3	42.9
Slovenia	122	51	33	52	26.3	56.1
The fYR of Macedonia	21	29	25	24	11.9	-4.4
Turkey	1 211	1 196	1 390	1 235	18.3	-11.2
Yugoslavia	...	...	173	231	21.9	33.6
OTHER EUROPE	3 690	3 614	4 289	4 299	22.0	0.2
Belarus	...	125	130	98	9.6	-24.8
Republic of Moldova	...	6	6	6	1.3	0.0
Russian Federation	964	1 294	1 779	2 229	15.4	25.3
Canada	3 284	3 457	3 661	4 548	146.6	24.2
United States	44 467	46 877	44 455	42 907	150.1	-3.5
NORTH AMERICA	47 751	50 334	48 116	47 455	149.7	-1.4

Source: UNECE/FAO TIMBER database, 2002.

ANNEX TABLE 12

Other paper and paperboard apparent consumption
(1,000 m.t.)

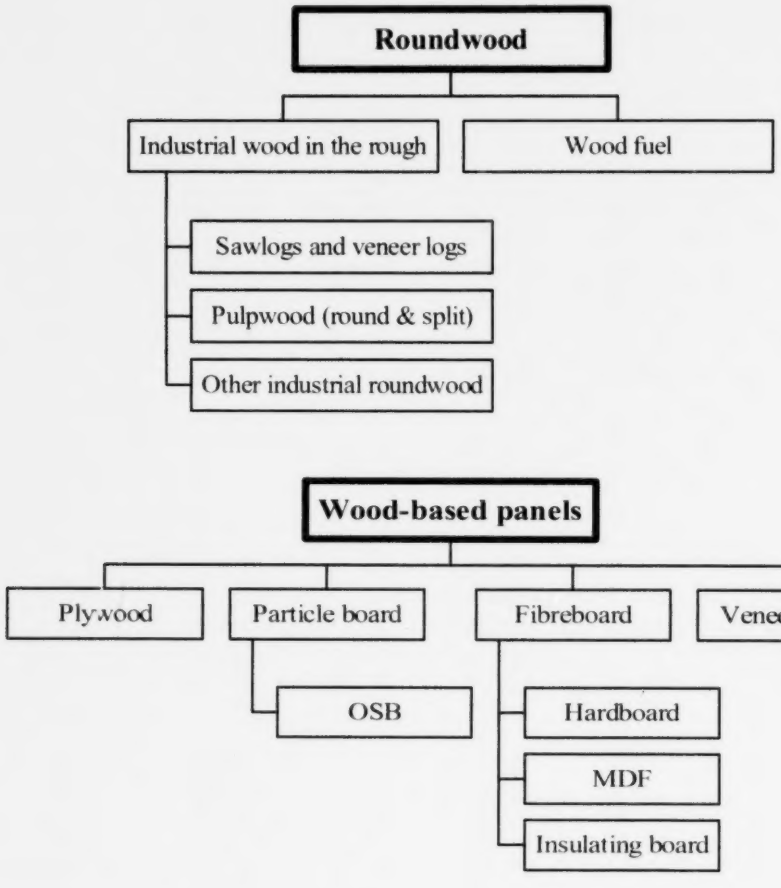
	1998	1999	2000	2001	m^3 per 1000 inhabitants 2001	% change 2000 to 2001
Austria	115	118	132	141	17.4	6.4
Belgium & Luxembourg	181	...	...	...	...	...
Belgium	...	105	107	102	9.9	-5.0
Luxembourg	...	8	-11	-11	-25.3	...
Denmark	74	88	69	92	17.3	33.3
Finland	92	129	136	129	25.0	-5.0
France	171	171	143	132	2.2	-7.8
Germany	1 075	1 120	1 190	1 143	13.9	-3.9
Greece	46	9	9	9	0.9	0.0
Iceland	...	...	...	...	...	...
Ireland	24	24	25	25	6.5	0.0
Italy	376	1 349	595	525	9.1	-11.7
Liechtenstein	...	...	...	...	...	...
Netherlands	52	26	-23	-23	-1.4	...
Norway	-26	-25	-30	35	7.8	...
Portugal	30	37	37	37	3.7	0.4
Spain	398	440	458	458	11.5	0.0
Sweden	128	117	88	85	9.6	-3.3
Switzerland	35	105	-7	3	0.5	..
United Kingdom	409	638	715	530	8.9	-25.9
EU/EFTA	3 179	4 459	3 634	3 412	9.2	-6.1
Albania	36	7	7	7	2.2	0.0
Bosnia and Herzegovina	...	...	...	...	...	...
Bulgaria	...	14	15	21	2.7	40.0
Croatia	71	74	74	74	15.9	0.0
Cyprus	...	...	2	1	1.6	-23.8
Czech Republic	24	20	38	42	4.1	11.6
Estonia	2	5	3	2	1.4	-24.8
Hungary	26	26	32	32	3.2	0.0
Israel	...	...	...	...	...	...
Latvia	10	2	4	7	2.7	49.1
Lithuania	0	3	3	3	0.7	-12.5
Malta	...	...	...	...	...	...
Poland	156	227	232	230	6.0	-0.9
Romania	7	27	12	20	0.9	67.8
Slovakia	49	117	123	115	21.3	-6.5
Slovenia	12	16	13	13	6.3	-0.7
The fYR of Macedonia	0	-3	1	2	0.8	15.6
Turkey	59	56	62	53	0.8	-14.5
Yugoslavia	58	85	23	41	3.9	81.0
OTHER EUROPE	509	676	643	662	3.4	2.9
Belarus	...	89	102	115	11.3	12.5
Republic of Moldova	...	7	7	7	1.6	0.0
Russian Federation	412	537	426	395	2.7	-7.3
Canada	-58	18	928	23	0.7	-97.5
United States	2 479	2 583	2 556	2 302	8.1	-9.9
NORTH AMERICA	2 421	2 601	3 484	2 325	7.3	-33.3

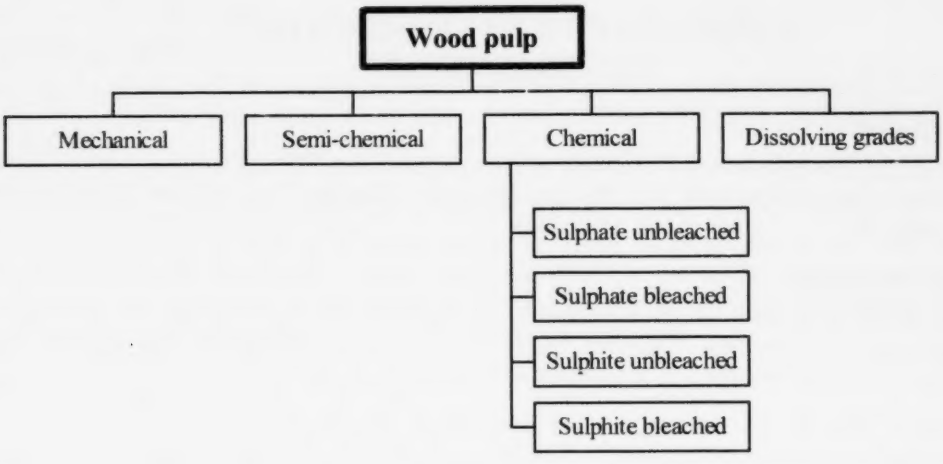
Source: UNECE/FAO TIMBER database, 2002.

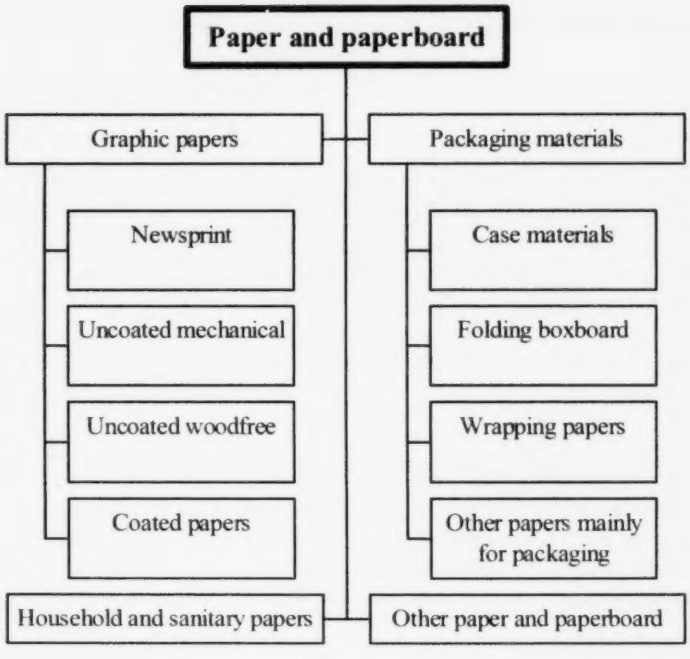
Components of wood products groups

(Based on Joint Forest Sector Questionnaire nomenclature. 2001)

The important breakdowns of the major groups of primary forest products are diagrammed below. In addition, many sub-items are further divided into softwood or hardwood. These are all the roundwood products, sawnwood, veneer sheets and plywood. Items that do not fit into listed aggregates are not shown. These are wood charcoal, chips and particles, wood residues, sawnwood, other pulp and recovered paper.




Wood pulp
Mechanical
Semi-chemical
Chemical
Dissolving grades
Sulphate unbleached
Sulphate bleached
Sulphite unbleached
Sulphite bleached


Paper and paperboard
Graphic papers
Packaging materials
Newsprint
Uncoated mechanical
Uncoated woodfree
Coated papers
Case materials
Folding boxboard
Wrapping papers
Other papers mainly for packaging
Household and sanitary papers
Other paper and paperboard

FOREST PRODUCTS TERMINOLOGY[1]

GENERAL TERMS

Coniferous (softwood)

All woods derived from trees classified botanically as Gymnospermae, e.g. *Abies* spp., *Araucaria* spp., *Cedrus* spp., *Chamaecyparis* spp., *Cupressus* spp., *Larix* spp., *Picea* spp., *Pinus* spp., *Thuja* spp., *Tsuga* spp., etc. These are generally referred to as softwoods.

Non-coniferous (hardwood)

All woods derived from trees classified botanically as Angiospermae, e.g. *Acer* spp., *Dipterocarpus* spp., *Entandrophragma* spp., *Eucalyptus* spp., *Fagus* spp., *Populus* spp., *Quercus* spp., *Shorea* spp., *Swietonic* spp., *Tectona* spp., etc. These are generally referred to as broadleaves or hardwoods.

Tropical

Tropical timber is defined in the International Tropical Timber Agreement (1994) as follows "Non-coniferous tropical wood for industrial uses, which grows or is produced in the countries situated between the Tropic of Cancer and the Tropic of Capricorn. The term covers logs, sawnwood, veneer sheets and plywood. Plywood which includes in some measure conifers of tropical origin shall also be covered by the definition." Tropical sawnwood, veneer sheets and plywood shall also include products produced in non-tropical countries from imported tropical roundwood.

TRANSACTIONS

Removals

The volume of all trees, living or dead, that are felled and removed from the forest, other wooded land or other felling sites. It includes natural losses that are recovered (i.e. harvested), removals during the year of wood felled during an earlier period removals of non-stem wood such as stumps and branches (where these are harvested) and removal of trees killed or damaged by natural causes (i.e. natural losses), e.g. fire, windblown, insects and diseases. It excludes bark and other non-woody biomass and any wood that is not removed, e.g. stumps, branches and tree tops (where these are not harvested) and felling residues (harvesting waste). It is reported in cubic metres solid volume underbark (i.e. excluding bark). Where it is measured overbark (i.e. including bark), the volume has to be adjusted downwards to convert to an underbark estimate.

Production

The solid volume or weight of all production of the products specified below. It includes the production of products that may immediately be consumed in the production of another product (e.g. wood pulp, which may immediately be converted into paper as part of a continuous process). It excludes the production of veneer sheets that are used for plywood production within the same country. It is reported in cubic metres of solid volume in the case of roundwood, sawnwood and wood based panels and metric tonnes in the case of charcoal, pulp and paper products.

Imports (volume, value)

Products imported for domestic consumption or processing shipped into a country. It includes imports for re-export. It excludes "In-transit" shipments. It is reported in cubic metres of solid volume or metric tonnes and values normally include cost, insurance and freight (i.e. CIF).

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[1] From ECE/FAO/EUROSTAT/ITTO Joint Forest Sector Questionnaire and APA-The Engineered Wood Association.

Exports (volume, value)

Products of domestic origin or manufacture shipped out of the country. It includes re-exports. It excludes "in-transit" shipments. It is reported in cubic metres of solid volume or metric tonnes and values are normally recorded as free-on-board (i.e. FOB).

PRODUCTS

The names of individual forest products and product aggregates are listed below in the order in which they occur in the publication *Forest Products Statistics*. Separate definitions are not provided for coniferous and non-coniferous components where the general definition given above applies. Unless indicated otherwise, each forest product category includes both coniferous and non-coniferous components.

Roundwood

All roundwood felled or otherwise harvested and removed. It comprises all wood obtained from removals, i.e. the quantities removed from forests and from trees outside the forest, including wood recovered from natural, felling and logging losses during the period, calendar year or forest year. It includes all wood removed with or without bark, including wood removed in its round form, or split, roughly squared or in other form (e.g. branches, roots, stumps and burls [where these are harvested]) and wood that is roughly shaped or pointed. It is an aggregate comprising wood fuel, including wood for charcoal and industrial roundwood (wood in the rough). It is reported in cubic metres solid volume underbark (i.e. excluding bark).

Wood fuel (including wood for charcoal)

Roundwood that will be used as fuel for purposes such as cooking, heating or power production. It includes wood harvested from main stems, branches and other parts of trees (where these are harvested for fuel) and wood that will be used for charcoal production (e.g. in pit kilns and portable ovens). The volume of roundwood used in charcoal production is estimated by using a factor of 6.0 to convert from the weight (m.t.) of charcoal produced to the solid volume (m^3) of roundwood used in production. It also includes wood chips to be used for fuel that are made directly (i.e. in the forest) from roundwood. It excludes wood charcoal. It is reported in cubic metres solid volume underbark (i.e. excluding bark).

Industrial roundwood (wood in the rough)

All roundwood except wood fuel. It is an aggregate comprising sawlogs and veneer logs; pulpwood, round and split; and other industrial roundwood. It is reported in cubic metres solid volume underbark (i.e. excluding bark). The customs classification systems used by most countries do not allow the division of industrial roundwood *trade* statistics into the different end-use categories that have long been recognized in *production* statistics (i.e. saw and veneer logs, pulpwood and other industrial roundwood. It excludes telephone poles.

Sawlogs and veneer logs

Roundwood that will be sawn (or chipped) lengthways for the manufacture of sawnwood or railway sleepers (ties) or used for the production of veneer (mainly by peeling or slicing). It includes roundwood (whether or not it is roughly squared) that will be used for these purposes: shingle bolts and stave bolts; match billets and other special types of roundwood (e.g. burls and roots, etc.) used for veneer production. It is reported in cubic metres solid volume underbark (i.e. excluding bark).

Pulpwood, round and split

Roundwood that will be used for the production of pulp, particleboard or fibreboard. It includes: roundwood (with or without bark) that will be used for these purposes in its round form or as splitwood or wood chips made directly (i.e. in the forest) from roundwood. It is reported in cubic metres solid volume underbark (i.e. excluding bark).

Other industrial roundwood

Industrial roundwood (wood in the rough) other than sawlogs, veneer logs or pulpwood. It includes roundwood that will be used for poles, piling, posts, fencing, pitprops tanning, distillation and match blocks, etc. It is reported in cubic metres solid volume underbark (i.e. excluding bark).

Wood charcoal

Wood carbonised by partial combustion or the application of heat from external sources. It includes charcoal used as a fuel or for other uses, e.g. as a reduction agent in metallurgy or as an absorption or filtration medium. It is reported in metric tonnes.

Chips and particles

Wood that has been deliberately reduced to small pieces during the manufacture of other wood products and is suitable for pulping, for particle board and fibreboard production, for use as a fuel, or for other purposes. It excludes wood chips made directly (i.e. in the forest) from roundwood (i.e. already counted as pulpwood, round and split). It is reported in cubic metres solid volume excluding bark.

Wood residues

The volume of roundwood that is left over after the production of forest products in the forest processing industry (i.e. forest processing residues) and that has not been reduced to chips or particles. It includes sawmill rejects, slabs, edgings and trimmings, veneer log cores, veneer rejects, sawdust, residues from carpentry and joinery production, etc. It excludes wood chips made either directly (i.e. in the forest) from roundwood or made from residues (i.e. already counted as pulpwood, round and split or wood chips and particles). It is reported in cubic metres solid volume excluding bark.

Sawnwood

Wood that has been produced from both domestic and imported roundwood, either by sawing lengthways or by a profile-chipping process and that, with a few exceptions, exceeds 5 mm in thickness. It includes planks, beams, joists, boards, rafters, scantlings, laths, boxboards and "lumber", etc., in the following forms: unplaned, planed, finger-jointed, etc. It excludes sleepers, wooden flooring, mouldings (sawnwood continuously shaped along any of its edges or faces, like tongued, grooved, rebated, V-jointed, beaded, moulded, rounded or the like) and sawnwood produced by resawing previously sawn pieces. It is reported in cubic metres solid volume.

Wood-based panels

This product category is an aggregate comprising veneer sheets, plywood, particle board, and fibreboard. It is reported in cubic metres solid volume.

Veneer sheets

Thin sheets of wood of uniform thickness, rotary cut (i.e. peeled), sliced or sawn. It includes wood used for the manufacture of laminated construction material, furniture, veneer containers, etc. It excludes wood used for plywood production within the same country. It is reported in cubic metres solid volume.

Plywood

A panel consisting of an assembly of veneer sheets bonded together with the direction of the grain in alternate plies generally at right angles. The veneer sheets are usually placed symmetrically on both sides of a central ply or core that may itself be made from a veneer sheet or another material. It includes *veneer plywood* (plywood manufactured by bonding together more than two veneer sheets, where the grain of alternate veneer sheets is crossed, generally at right angles); *core plywood* or *blockboard* (plywood with a solid core (i.e. the central layer, generally thicker than the other plies) that consists of narrow boards, blocks or strips of wood placed side by side, which may or may not be glued together); *cellular board* (plywood with a core of cellular construction); and *composite plywood* (plywood with the core or certain layers made of material other than solid wood or veneers). It excludes laminated construction materials (e.g. glulam), where the grain of the veneer sheets generally runs in the same direction. It is reported in cubic metres solid volume. Non-coniferous (tropical) plywood is defined as having at least one face sheet of non-coniferous (tropical) wood.

Particle board (including oriented strandboard [OSB])

A panel manufactured from small pieces of wood or other ligno-cellulosic materials (e.g. chips, flakes, splinters, strands, shreds, shives, etc.) bonded together by the use of an organic binder together with one or more of the following agents: heat, pressure, humidity, a catalyst, etc. The particle board category is an aggregate category. It

includes particle board, oriented strandboard (OSB) and flaxboard. It excludes wood wool and other particle boards bonded together with inorganic binders. It is reported in cubic metres solid volume.

Oriented strandboard (OSB)

A structural board in which layers of narrow wafers are layered alternately at right angles in order to give the board greater elastomechanical properties. The wafers, which resemble small pieces of veneer, are coated with e.g. waterproof phenolic resin glue, interleaved together in mats and then bonded together under heat and pressure. The resulting product is a solid, uniform building panel having high strength and water resistance. It includes waferboard and oriented strandboard (OSB). It is reported in cubic metres solid volume.

Fibreboard

A panel manufactured from fibres of wood or other ligno-cellulosic materials with the primary bond deriving from the felting of the fibres and their inherent adhesive properties (although bonding materials and/or additives may be added in the manufacturing process). It includes fibreboard panels that are flat-pressed and moulded fibreboard products. It is an aggregate comprising hardboard, medium density fibreboard (MDF), and insulating board. It is reported in cubic metres solid volume.

Hardboard

Fibreboard of a density exceeding 0.8 g/cm^3. It excludes similar products made from pieces of wood, wood flour or other ligno-cellulosic material where additional binders are required to make the panel, and panels made of gypsum or other mineral material. It is reported in cubic metres solid volume.

Medium density fibreboard (MDF)

Fibreboard of a density exceeding 0.5 g/cm^3 but not exceeding 0.8 g/cm^3. It is reported in cubic metres solid volume.

Insulating board

Fibreboard of a density not exceeding 0.5 g/cm^3. It is reported in cubic metres solid volume.

Wood pulp

Fibrous material prepared from pulpwood, wood chips, particles or residues by mechanical and/or chemical process for further manufacture into paper, paperboard, fibreboard or other cellulose products. It is an aggregate comprising mechanical wood pulp; semi-chemical wood pulp; chemical wood pulp; and dissolving wood pulp. It is reported in metric tonnes air-dry weight (i.e. with a 10% moisture content).

Mechanical wood pulp

Wood pulp obtained by grinding or milling pulpwood or residues into fibres, or through refining chips or particles. Also called groundwood pulp and refiner pulp, it may be bleached or unbleached. It includes chemi-mechanical and thermo-mechanical pulp. It excludes exploded and defibrillated pulp. It is reported in metric tonnes air-dry weight (i.e. with 10% moisture content).

Semi-chemical wood pulp

Wood pulp obtained by subjecting pulpwood, wood chips, particles or residues to a series of mechanical and chemical treatments, none of which alone is sufficient to make the fibres separate readily. It may be bleached or unbleached. It includes semi-chemical wood pulp; chemi-groundwood pulp; and chemi-mechanical wood pulp etc. (named in the order and importance of the treatment during the manufacturing process). It is reported in metric tonnes air-dry weight (i.e. with 10% moisture content).

Chemical wood pulp

Wood pulp obtained by subjecting pulpwood, wood chips, particles or residues to a series of chemical treatments. It includes sulphate (kraft) wood pulp; soda wood pulp and sulphite wood pulp. It may be bleached, semi-bleached or unbleached. It excludes dissolving grades of wood pulp. It is reported in metric tonnes air-dry weight (i.e. with 10% moisture content). Component pulps are unbleached sulphite pulp, bleached sulphite pulp, unbleached sulphate pulp, and bleached sulphate pulp.

Sulphite unbleached pulp

Sulphite bleached pulp

Wood pulp obtained by mechanically reducing pulpwood, wood chips, particles or residues to small pieces that are subsequently cooked in a pressure vessel in the presence of a bisulphite cooking liquor. Bisulphites such as ammonium, calcium, magnesium and sodium are commonly used in this process. It excludes dissolving grades of wood pulp. It is reported in metric tonnes air-dry weight (i.e. with a 10% moisture content).

Dissolving grades

Chemical pulp (sulphate, soda or sulphite) made from wood of special quality, with a very high alpha-cellulose content (usually 90 percent and over). This type of pulp is always bleached and is readily adaptable for uses other than papermaking. It is used principally as a source of cellulose in the manufacture of products such as synthetic fibres, cellulose plastic materials, lacquers and explosives. It is reported in metric tonnes air-dry weight (i.e. with 10% moisture content).

Other pulps

Pulp manufactured from waste paper or from fibrous vegetable materials other than wood and used for the manufacture of paper, paperboard and fibreboard. It is an aggregate comprising pulp from fibres other than wood and recovered fibre pulp. It is reported in metric tonnes air-dry weight (i.e. with 10% moisture content).

Pulp from fibres other than wood

Pulp manufactured from fibrous vegetable materials other than wood and used for the manufacture of paper, paperboard and fibreboard. It excludes pulp made from recovered paper. It includes pulps made from straw, bamboo, bagasse, esparto, other reeds or grasses, cotton fibres, flax, hemp, rags, and other textile wastes. It is reported in metric tonnes air-dry weight (i.e. with 10% moisture content).

Recovered fibre pulp

Pulp manufactured from recovered paper or paperboard and used for the manufacture of paper, paperboard and fibreboard. It excludes pulp made from straw, bamboo, bagasse, esparto, other reeds or grasses, cotton fibres, flax, hemp, rags, and other textile wastes. It is reported in metric tonnes air-dry weight (i.e. with 10% moisture content).

Recovered paper

Waste and scraps of paper or paperboard that have been collected for re-use as a raw material for the manufacture of paper and paperboard. It includes paper and paperboard that has been used for its original purpose and residues from paper and paperboard production. It is reported in metric tonnes.

Paper and paperboard

The paper and paperboard category is an aggregate category. It represents the sum of graphic papers, sanitary and household papers, packaging materials and other paper and paperboard. Products in this category are generally manufactured in strips or rolls of a width exceeding 15 cm (36 cm for HS 48.13 and 48.19) or in rectangular sheets with one side exceeding 36 cm and the other exceeding 15 cm in the unfolded state. It excludes manufactured paper products such as boxes, cartons, books and magazines, etc. It is reported in metric tonnes.

Graphic papers

The graphic papers category is an aggregate category. It represents the sum of: newsprint, uncoated mechanical, uncoated woodfree and coated papers. Products in this category are generally manufactured in strips or rolls of a width exceeding 15 cm (36 cm for HS 48.13 and 48.19) or in rectangular sheets with one side exceeding 36 cm and the other exceeding 15 cm in the unfolded state. It excludes manufactured paper products such as books and magazines, etc. It is reported in metric tonnes.

Newsprint

Paper mainly used for printing newspapers. It is made largely from mechanical pulp and/or waste paper, with or without a small amount of filler. Weights usually range from 40 to 52 g/m^2 but can be as high as 65 g/m^2. Newsprint is machine finished or slightly calendered, white or slightly coloured and is used in reels for letterpress, offset or flexo printing. It is reported in metric tonnes.

Uncoated mechanical

Paper suitable for printing or other graphic purposes where less than 90% of the fibre furnish consists of chemical pulp fibres. This grade is also known as groundwood or wood-containing paper and magazine paper, such as heavily filled supercalendered paper for consumer magazines printed by the rotogravure and offset methods. It excludes wallpaper base. It is reported in metric tonnes.

Uncoated woodfree

Paper suitable for printing or other graphic purposes, where at least 90% of the fibre furnish consists of chemical pulp fibres. Uncoated woodfree paper can be made from a variety or furnishes, with variable levels of mineral filler and a range of finishing processes such as sizing, calendering, machine glazing and watermarking. This grade includes most office papers, such as business forms, copier, computer, stationery and book papers. Pigmented and size press "coated" papers (coating less than 5 g per side) are covered by this heading. It excludes wallpaper base. It is reported in metric tonnes.

Coated papers

All paper suitable for printing or other graphic purposes and coated on one or both sides with carbon or minerals such as china clay (kaolin), calcium carbonate, etc. Coating may be by a variety of methods, both on-machine and off-machine, and may be supplemented by supercalendering. It includes raw carbon and self-copy paper in rolls or sheets. It excludes other copying and transfer papers. It is reported in metric tonnes.

Sanitary and household papers

This covers the stock of a wide range of tissue and other hygienic papers for use in households or commercial and industrial premises. Examples are toilet paper and facial tissues, kitchen towels, hand towels and industrial wipes. Some tissue is also used in the manufacture of baby napkins, sanitary towels, etc. The parent reel stock is made from virgin pulp or recovered fibre or mixtures of these. Final products cut to size or in rolls not exceeding 36 cm are excluded here. It is reported in metric tonnes.

Packaging materials

Paper or paperboard mainly used for wrapping and packaging purposes. It excludes: Unbleached kraft paper and paperboard that are not sack kraft paper or kraftliner and weighing more than 150 g/m^2 but less than 225 g/m^2, felt paper and paperboard, tracing papers, not further processed uncoated paper weighing 225 g/m^2 or more. It is reported in metric tonnes.

Case materials

Papers and boards mainly used in the manufacture of corrugated board. They are made from any combination of virgin and recovered fibres and can be bleached, unbleached or mottled. It includes kraftliner, testliner, semi-chemical fluting, and waste-based fluting (Wellenstoff). It is reported in metric tonnes.

Folding boxboard

Often referred to as cartonboard, it may be single- or multi-ply, coated or uncoated. It is made from virgin and/or recovered fibres, and has good folding properties, stiffness and scoring ability. It is mainly used in cartons for consumer products such as frozen food and for liquid containers. It includes paper and paperboard covered or coated with plastics (excluding adhesives); coated Multi-ply not uniformly bleached throughout the mass. It is reported in metric tonnes.

Wrapping papers

Wrappings (up to 150 g/m^2): Papers whose main use is wrapping or packaging made from any combination of virgin or recovered fibres, bleached or unbleached. They may be subject to various finishing and/or marking processes. It includes: sack kraft, other wrapping krafts, sulphite and greaseproof papers as well as coated paper and paperboard not uniformly bleached throughout the mass, except multi-ply. It excludes tracing papers. It is reported in metric tonnes.

Other papers mainly for packaging

This category embraces all papers and boards mainly for packaging purposes other than those listed above. Most are produced from recovered fibres, e.g. greyboards, and go for conversion, which in some cases may be for end-uses other than packaging. It includes composite, not coated, paper and paper board of flat layers stuck together. It is reported in metric tonnes.

Other paper and paperboard N.E.S. (Not Elsewhere Specified)

Other papers and boards for industrial and special purposes. This category includes cigarette papers and stock of filter papers, as well as gypsum liners and special papers for waxing, insulating, roofing, asphalting, and other specific applications or treatments. It excludes all composite, not coated, paper and paper board of flat layers stuck together; coated paper and paperboard not uniformly bleached throughout the mass; paper and paperboard covered or coated with plastics (excluding adhesives). It includes wallpaper base; unbleached kraft paper and paperboard that are not sack kraft paper or kraftliner and weighing more than 150 g/m^2 but less than 225 g/m^2; felt paper and paperboard; tracing papers; not further processed uncoated paper weighing 225 g/m^2 or more, raw copying and transfer papers, in rolls or sheets except carbon or self-copy paper. It is reported in metric tonnes.

SECONDARY PROCESSED WOOD AND PAPER PRODUCTS

Further processed sawnwood

Wood sawn or chipped lengthwise (including strips and friezes for parquet flooring, not assembled) and continuously shaped (tongued, grooved, rebated, V-jointed, beaded, moulded, rounded or the like) along any of its edges or faces, whether or not planed, sanded or finger jointed. It excludes: sawn or chipped wood with further treatment of edges and/or faces other than planing, or sanding.

Wooden wrapping and packaging material

Packing cases, boxes, crates, drums and similar packings, of wood; cable-drums of wood; pallets, box pallets and other load boards, of wood; pallet collars of wood. Casks, barrels, vats, tubs and other coopers' products and parts thereof, of wood, including staves.

Builder's joinery and carpentry of wood

Including windows and doors and coverings thereof as well as cellular wood panels, assembled parquet panels, shingles and shakes.

Wooden furniture

Seats with wooden frames such as wooden camping and garden seats etc., and parts thereof., except: seats convertible into beds, swivel seats, medical seats. Wooden furniture other than seats as of a kind used in offices, in the kitchen, bedrooms and elsewhere, as well as parts of all these.

Prefabricated buildings preponderantly made of wood

E.g.: Log cabins, houses prefabricated from particle board.

Secondary paper products

It includes all articles of paper ready for use. It excludes paper in rolls and sheets cut in the formats specified in paper and paperboard.

Composite paper and paperboard

Composite paper and paperboard (made by sticking flat layers of paper or paperboard together with an adhesive), not surface-coated or impregnated, whether or not internally reinforced, in rolls or sheets.

Special coated paper and pulp products

Paper, paperboard, cellulose wadding and webs of cellulose fibres, coated, impregnated, covered, surface-coloured, surface-decorated or printed, in rolls or sheets. It excludes composite paper and paperboard (made by sticking flat layers of paper or paperboard together with an adhesive), not surface-coated or impregnated, but possibly laminated internally with bitumen, tar or asphalt, in rolls or sheets.

Carbon paper and copying paper, ready for use

Carbon paper, self-copy paper and other copying or transfer, duplicator stencils and offset plates, of paper, whether or not put up in boxes. It excludes raw carbon, self-copy and other copying or transfer papers in paper in rolls or sheets.

Household and sanitary paper

Products ready for use: toilet paper and similar paper, cellulose wadding or webs of cellulose fibres, of a kind used for household or sanitary purposes, in rolls of a width not exceeding 36 cm, or cut to size or shape. It includes e.g. handkerchiefs, cleansing tissues, towels, tablecloths, serviettes, napkins for babies, tampons, bed sheets and similar household, sanitary or hospital articles, articles of apparel and clothing accessories, of paper pulp, paper, cellulose wadding or webs of cellulose fibres. It excludes sanitary paper produced stock.

Packaging cartons, boxes etc.

Cartons, boxes, cases, bags and other packing containers, of paper, paperboard, cellulose wadding or webs of cellulose fibres; box files, letter trays, and similar articles, of paper or paperboard of a kind used in offices, shops or the like.

Other articles of paper and paperboard, ready for use

Products ready for use: e.g. wallpaper and similar wall coverings; window transparencies of paper; floor coverings on a base of paper or of paperboard, whether or not cut to size; all office material like for correspondence, document storage as well as albums, labels of all kinds, bobbins, spools, cops and similar supports of paper pulp, paper or paperboard (whether or not perforated or hardened); all other paper, paperboard, cellulose wadding and webs of cellulose fibres, cut to size or shape; other articles of paper pulp, paper, paperboard, cellulose wadding or webs of cellulose fibres.

Filter paper and paperboard, ready for use

Printing and writing paper, ready for use

For example: strips or rolls for office machines, continuous forms.

Articles, moulded or pressed from pulp

For example: packagings for eggs.

Printed articles

Printed books

Printed books, brochures, leaflets and similar printed matter, whether or not in single sheets.

Newspapers

Newspapers, journals and periodicals, whether or not illustrated or containing advertising material.

Other printed articles

Children's picture, drawing or colouring books; music, printed or in manuscript, whether or not bound or illustrated; maps and hydrographic or similar charts of all kinds, including atlases, wall maps, topographical plans and globes, printed; plans and drawings for architectural, engineering, industrial, commercial, topographical or similar purposes, being originals drawn by hand; hand-written texts; photographic reproductions on sensitised paper and carbon copies of the foregoing; unused postage, revenue or similar stamps of current or new issue in the country to which they are destined; stamp-impressed paper; banknotes; cheque forms; stock, share or bond certificates and similar documents of title; transfers (decalcomania); printed or illustrated postcards; printed cards bearing personal greetings, messages or announcements, whether or not illustrated, with or without envelopes or trimmings; calendars of any kind, printed, including calendar blocks; other printed matter, including printed pictures and photographs.

ENGINEERED WOOD PRODUCTS

These definitions come from APA-The Engineered Wood Association. APA classifies glued engineered wood products into three general groups: 1. glued laminated timber (glulam), 2. structural composite lumber (SCL) consisting primarily of laminated veneer lumber (LVL), but also parallel strand lumber and oriented strand lumber, and 3. wood I-beams.

Glued laminated timber (glulam)

Glulam is an engineered stress-rated product created by adhesively bonding together individual pieces of lumber having a thickness of 50 mm (2 inches) or less. It's one of the most versatile of the engineered wood products. It can be easily shaped into forms ranging from straight beams to complex curved members and is used for a wide variety of structural applications in both residential and nonresidential construction. Glulam is used typically for headers, girders, purlins, beams, arches, and in exposed applications such as bridges, marinas and transmission structures.

Structural composite lumber

Laminated Veneer Lumber (LVL)

LVL is the most widely used of the structural composite lumber products. It is produced by adhesively bonding thin wood veneers together in a large billet so that the grain of all veneers is parallel to the long direction. The LVL billet is then sawn to desired dimensions depending on the construction application. Some of the many uses are in header and beam applications, hip and valley rafters, as scaffold planking and as flange material for wood I-beams.

Parallel Strand Lumber (PSL)

PSL consists of long veneer strands laid in parallel formation and bonded together with an adhesive to form beams. Like LVL and glulam, this product is used for beam and header applications where high bending strength is needed.

Oriented Strand Lumber (OSL)

Similar to PSL, oriented strand lumber is made from flaked wood strands that have a high length-to-thickness ratio. Combined with an adhesive, the strands are oriented and formed into a large mat or billet and pressed. OSL is used in a variety of applications from studs to millwork components.

Wood I-beams

Wood I-beams are structural, load-carrying products designed mostly for floor joist applications. The beams offer long length and low material weight. Their "I" configuration provides high strength and stiffness. The flange material for I-beams is typically dimension lumber or LVL; the web material is typically oriented strand board (OSB) or plywood. Wood I-beams, used extensively in residential construction, continue to be the fastest growing of the glued engineered wood products.

Countries in the UNECE region and its subregions

EU/EFTA – Subregion of Europe
Other Europe – Subregion of Europe
Commonwealth of Independent States (CIS) subregion
North America subregion

"EU/EFTA" – subregion of Europe

Austria
Belgium
Denmark
Finland
France
Germany
Greece
Iceland
Ireland
Italy
Liechtenstein
Luxembourg
Netherlands
Norway
Portugal
Spain
Sweden
Switzerland
United Kingdom

"Other Europe" – subregion of Europe

Albania
Andorra
Bosnia-Herzegovina
Bulgaria
Croatia
Cyprus
Czech Republic
Estonia
Hungary
Israel
Latvia
Lithuania
Malta
Monaco
Poland
Romania
San Marino
Slovak Republic
Slovenia
The former Yugoslav Republic of Macedonia
Turkey
Yugoslavia

Commonwealth of Independent States (CIS) subregion

Armenia
Azerbaijan
Belarus
Georgia
Kazakhstan
Kyrgyzstan
Republic of Moldova
Russian Federation
Tajikistan
Turkmenistan
Ukraine
Uzbekistan

North America subregion

Canada
United States of America

SOURCES OF INFORMATION USED IN THE *FOREST PRODUCTS ANNUAL MARKET REVIEW*

APA – The Engineered Wood Association, United States, (http://www.apawood.org)

Arborescences, France, (http://www.onf.fr)

Baltic Timber Journal, Latvia, (http://www.btj.lv)

Bureau of Labor Statistics, United States, (http://stats.bls.gov)

Canadian Standards Association, CSA International, (http://www.csa.ca)

Canadian Sustainable Forestry Certification Coalition, (http://www.sfms.com)

Centre d'Etudes de l'Economie du Bois, France, (http://www.able-bois.com)

Chilean Forestry News, (http://www.conaf.cl)

Council of Forest Industries, Canada, (http://www.cofi.org)

Eastern Quotes & Comments, United States, (http://www.rctc.com/irland/)

Engineered Lumber Trends, United States, (http://www.rctc.com/irland/)

European Panel Federation (EPF), (http://www.europanels.org/)

EUROSTAT – European Union Statistical Office, (http://europa.eu.int/comm/eurostat)

Fédération Nationale du Bois, France, (http://www.fnbois.com)

Finnish Forest Research Institute (METLA), (http://www.metla.fi)

Forest Products Conservation & Recycling Review by USDA Forest Service, United States, (http://pc9.fpl.fs.fed.us/documnts/nltrlist.htm)

Forest Products Journal, United States, (http://www.forestprod.org)

Forest Stewardship Council (FSC), (http://www.fscoax.org)

Hardwood Market Report, United States, (http://www.hmr.com)

hardwoodmarkets.com, United Kingdom, (http://www.hardwoodmarkets.com/)

Hardwood Review Export, United States, (http://www.hardwoodreview.com)

Holz Kurier, *Austria*, (http://www.agrarverlag.at)

Holz-Forschung & Holz-Verweetung, Austria

Holz-Zentralblatt, Germany, (http://www.holz-zentralblatt.com)

Import Export Purchasing News, United States, (http://www.millerpublishing.com/le/news.html)

Instituto Forestal, Chile, (http://www.infor.cl)

International Wood Fiber Report, United States, (http://www.pulp-paper.com)

International Organization for Standardization (ISO), (http://www.iso.ch)

The International Tropical Timber Organisation (ITTO), (http://www.itto.or.jp)

Jaakko Pöyry Consulting, (http://consulting.poyry.com)

Japan Lumber Journal, (http://www.jlj.gr.jp)

Japan Lumber Reports, (http://www.n-mokuzai.com/)

Japan Wood-Products Information and Research Center – JAWIC, (http://www.jawic.or.jp)

La Forêt, Switzerland, (http://www.wvs.ch)

Le Bois National, France, (http://www.boiscope.com/)

Le Commerce International du Bois, France, (http://www.ifrance.com/cib-ltb)

L'Echo des Bois, *Belgium*, (http://www.echodesbois.be)

Lithuanian Centre of Forest Economics Information Bulletin, (MEC Naujienos), (http://www.mec.lt)

Maskayu, Malaysia, (http://www.mtib.gov.my)

Ministry of Forests, British Columbia, Canada, (http://www.gov.bc.ca/for)

Monthly Statistics of Japan, (http://www.stat.go.jp/english/data/geppou/index.htm)

Newsprint Data, Canada, (http://www.cppa.org/)

New Zealand Forest Industries, (http://www.nzforest.co.nz)

Pan European Forest Certification (PEFC), (http://www.pefc.org)

Paperloop.com, United States, (http://www.paperloop.com)

PaperTree Letter, United States, (http://wood-info.com/1879.htm)

Perkasa, Malaysia, (http://www.pusaka.gov.my/)

PIMA - Papermaker Magazine, United States, (http://www.pimaweb.com)

Pulp and Paper Products Council, Canada, (http://www.pppc.org)

Random Lengths Export, United States, (http://www.randomlengths.com)

Random Lengths Yardstick, United States, (http://www.randomlengths.com)

Statistische Bundesamt Preise, Reiche 1; Reiche 2, Germany (http://www.destatis.de)

Swedish National Board for Industrial and Technical Development (NUTEK), (http://www.nutek.se)

Swedish National Energy Administration, (http://www.stem.se)

Swedish Wood Association, (http://www.stef.se)

Swiss Federal Statistical Office, Switzerland (http://www.statistik.admin.ch/)

Timber & Wood Products (TTJ), United Kingdom, (http://www.ttjonline.com/)

UNECE/FAO TIMBER database, (http://www.unece.org/trade/timber)

United States Census Bureau – United States Department of Commerce, (http://www.census.gov)

USDA Foreign Agricultural Service, United States, (http://ffas.usda.gov)

USDA Forest Service, United States, (http://www.fs.fed.us)

Weekly Hardwood Review, United States, (http://www.hardwoodreview.com)

Wood Based Panels, United Kingdom, (http://www.ttjonline.com/)

Wood Markets Monthly, United States, (http://www.woodmarkets.com)

Wood Products Statistical Roundup, American Forest and Paper Association, United States, (http://www.afandpa.org)

World Wide Wood, (http:// http://www.ttjonline.com)

WWF – Forests for Life, (http://www.panda.org/forests4life)

ZMP – Zentrale Markt- und Preisberichtstelle für Erzeugnisse der Land-, Forst- und Ernährungswirtschaft GmbH, Germany, (http://www.zmp.de)

Special chapters in former *Forest Products Annual Market Reviews*

Note to readers: We have found that some chapters of the *Review* have a longer life than the *Annual Market Review*. The following is a listing of all the special chapters, including their most important sections, in order to give an idea of their contents. Back issues are available on the Timber Committee website or through the secretariat.

Timber Bulletin – Volume LIV (2001)

Chapter 3 ***"Romania's Forest Products Markets"***, 12 pages

Secretariat introduction
General economic developments
Forest resources
Institutional framework – forest policy
The effects of the transition process
Forest products industry – production and consumption
Trade of wood and wood products
Integration into the EU
Prospects for wood industry

Chapter 4 ***"Influence on Japanese demand for wood products"***, 10 pages

Introduction
Background
Wood use trends
General trends impacting wood use
Summary
References

Timber Bulletin – Volume LIII (2000)

Chapter 3 ***"Effects of the December 1999 storms on European timber markets"***, 15 pages

Introduction
Damage magnitude: the equivalent of 2 years' harvest in 3 days!
Market effects: potential enormous imbalances mitigated through sector solidarity
Comparisons with 1990 market effects: similar problems and solutions
Assistance by governments: quick and multi-dimensional responsiveness
Positive outcomes?
Conclusion

Chapter 4 ***"Poland's forest products markets"***, 12 pages

Secretariat introduction
General economic developments
Forest resources
Institutional framework for forest and forest industries
Effects of the transition process
Integration into the EU
Forest industry – production and consumption
Trade of wood and wood products
Certified forest products
Prospects for wood industry

Chapter 5 ***"China's forest products markets"***, 19 pages
- Secretariat introduction
- General socio-economic development
- Forest resources
- Institutional framework
- Analysis and development of production of China's major forest products, 1981 to 1999
- Development of China's forest product trade from 1981 to 1999
- China's forests product trade in 1999
- Consumption of major forest products, with international comparisons
- Projections of demand and supply of China's forest products to 2010

Chapter 6 ***"Secondary processed wood products markets"***, 10 pages
- Secretariat introduction
- Introduction
- Secondary processed wood products
- Main flows and trade patterns
- Market profiles
- Conclusion

Chapter 11 ***"Engineered wood products – production, trade, consumption and outlook"***, 16 pages
- Secretariat note
- Introduction
- Current market situation
- Production, consumption and trade statistics
- Outlook for EWPs
- Conclusions

Timber Bulletin – Volume LII (1999)

Chapter 3 ***"Estonia's Forest Products Market"***, 7 pages
- General economic development
- Forest resources
- Institutional framework
- Forest industry
- Trade of wood and wood products

Chapter 4 ***"New Zealand's Forest Products Market"***, 7 pages
- Background to New Zealand's plantation forestry sector
- Market conditions
- Forestry production and trade 1998/1999

Chapter 5 ***"Trade Restrictions and the Future"***, 10 pages
- The question of market access
- Trends in tariffs and non-tariff measures
- Trade impediments
- Implications of further trade liberalization

Chapter 6 ***"Forest Products in the Electronic Market Place"***, 6 pages
- WWW-sites for forest products trade
- North American and European electronic commerce
- The role of the ECE Trade Division in electronic commerce

Chapter 13 ***"Tropical Timber Developments"***, 16 pages, (has since become annual chapter)
Production, exports, imports
Tropical timber consumption and price trends
Strengthening Asian currencies

Timber Bulletin – Volume LI (1998)

Chapter 3 ***"Certified Forest Products Marketplace"***, 11 pages, (has since become annual chapter)
Forest certification schemes
Why certification?
Status of supply and demand
Constraints to market development

Chapter 4 ***"Effects of the Asian Crisis on ECE Region Forest Products Markets"***, 7 pages
Global and specific impacts on the ECE region
Impacts on the radiata pine trade and other forest products
Japan's forest products production and trade
Indonesia's forest products production and trade in 1997 and 1998

Timber Bulletin – Volume XLVII (1994)

Chapter 3 ***"Recycling Wood Fibre and its Effects on the Forest and Forest Industries Sector"***, 7 pages
Situation analysis and legislation
Quantifying the effects
Consequences and solutions

Some facts about the Timber Committee

The Timber Committee is a principal subsidiary body of the UNECE (United Nations Economic Commission for Europe) based in Geneva. It constitutes a forum for cooperation and consultation between member countries on forestry, forest industry and forest product matters. All countries of Europe; the former USSR; United States, of America, Canada and Israel are members of the UNECE and participate in its work.

The UNECE Timber Committee shall, within the context of sustainable development, provide member countries with the information and services needed for policy- and decision-making regarding their forest and forest industry sector ("the sector"), including the trade and use of forest products and, when appropriate, formulate recommendations addressed to member Governments and interested organizations. To this end, it shall:

1. With the active participation of member countries, undertake short-, medium- and long-term analyses of developments in, and having an impact on, the sector, including those offering possibilities for the facilitation of international trade and for enhancing the protection of the environment;
2. In support of these analyses, collect, store and disseminate statistics relating to the sector, and carry out activities to improve their quality and comparability;
3. Provide the framework for cooperation e.g. by organizing seminars, workshops and ad hoc meetings and setting up time-limited ad hoc groups, for the exchange of economic, environmental and technical information between governments and other institutions of member countries that is needed for the development and implementation of policies leading to the sustainable development of the sector and to the protection of the environment in their respective countries;
4. Carry out tasks identified by the UNECE or the Timber Committee as being of priority, including the facilitation of subregional cooperation and activities in support of the economies in transition of central and eastern Europe and of the countries of the region that are developing from an economic point of view;
5. It should also keep under review its structure and priorities and cooperate with other international and intergovernmental organizations active in the sector, and in particular with the FAO (Food and Agriculture Organization of the United Nations) and its European Forestry Commission and with the ILO (International Labour Organisation), in order to ensure complementarity and to avoid duplication, thereby optimizing the use of resources.

More information about the Committee's work may be obtained by writing to:

Timber Section
Trade Development and Timber Division
UNECE
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CH - 1211 Geneva 10, Switzerland
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E-mail: info.timber@unece.org
Website address: http://www.unece.org/trade/timber

UNECE/FAO Publications

Timber Bulletin Volume LV (2002)

ECE/TIM/BULL/2002/...

1. Forest Products Prices, 1998-2000
2. Forest Products Statistics, 1997-2001 (database since 1964 on website)
3. Forest Products Annual Market Review, 2001-2002
4. Forest Fire Statistics, 1999-2001
5. Forest Products Trade Flow Data, 1999-2000
6. Forest Products Markets in 2002 and Prospects for 2003

Geneva Timber and Forest Study Papers

Forest policies and institutions of Europe, 1998-2000	ECE/TIM/SP/19
Forest and Forest Products Country Profile: Russian Federation	ECE/TIM/SP/18
(Country profiles also exist on Albania, Armenia, Belarus, Bulgaria, former Czech and Slovak Federal Republic, Estonia, Hungary, Lithuania, Poland, Romania, Republic of Moldova, Slovenia and Ukraine)	
Forest resources of Europe, CIS, North America, Australia, Japan and New Zealand	ECE/TIM/SP/17
State of European forests and forestry, 1999	ECE/TIM/SP/16
Non-wood goods and services of the forest	ECE/TIM/SP/15

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Geneva Timber and Forest Discussion Papers *(original language only)*

Forest Certification update for the UNECE region, summer 2002	ECE/TIM/DP/25
Forecasts of Economic Growth in OECD and Central and Eastern European Countries for the period 2000-2040 (EFSOS)	ECE/TIM/DP/24
Forest Certification update for the ECE Region, summer 2001	ECE/TIM/DP/23
Structural, Compositional and Functional Aspects of Forest Biodiversity in Europe	ECE/TIM/DP/22
Markets for secondary processed wood products, 1990-2000	ECE/TIM/DP/21
Forest certification update for the ECE Region, summer 2000	ECE/TIM/DP/20
Trade and environment issues in the forest and forest products sector	ECE/TIM/DP/19
Multiple use forestry	ECE/TIM/DP/18
Forest certification update for the ECE Region, summer 1999	ECE/TIM/DP/17
A summary of "The competitive climate for wood products and paper packaging: the factors causing substitution with emphasis on environmental promotions"	ECE/TIM/DP/16
Recycling, energy and market interactions	ECE/TIM/DP/15
The status of forest certification in the ECE region	ECE/TIM/DP/14
The role of women on forest properties in Haute-Savoie (France): Initial researches	ECE/TIM/DP/13
Interim report on the Implementation of Resolution H3 of the Helsinki Ministerial Conference on the protection of forests in Europe (Results of the second enquiry)	ECE/TIM/DP/12
Manual on acute forest damage	ECE/TIM/DP/7

International Forest Fire News *(two issues per year)*

Timber and Forest Information Series

Timber Committee Yearbook 2002 ECE/TIM/INF/9

The above series of publications may be requested free of charge through:

Timber Section
UNECE Trade Development and Timber Division
United Nations
Palais des Nations
CH - 1211 Geneva 10, Switzerland
Fax: + 41 22 917 0041
E-mail: info.timber@unece.org

Downloads are available at http://www.unece.org/trade/timber

Reader Survey

In an effort to continually improve the UNECE/FAO *Timber Bulletin*, "Forest Products Annual Market Review," readers are encouraged to express their opinions on its content, presentation and distribution. In order to better meet readers' needs, we would like to know more about our readership and their uses of the *Review*. Please fax or e-mail your response to the address below. Thank you.

Your name: _____ Country: _____

Job title: _____

What are your market-related activities? _____

_____

Organisation/Company/Institution/Ministry: _____

What are its market-related activities? _____

_____

Your e-mail address (optional): _____

1. For what purposes do you use this *Review*? (Indicate all which apply.)
   - a. ____ Market sector analyses
   - b. ____ Statistical information
   - c. ____ Statistical analysis
   - d. ____ Policy development
   - e. ____ Information for re-publication
   - f. ____ Preparation for Timber Committee market discussions
   - g. ____ Other: (please specify)

2. Which chapters were useful and interesting for you?
   - a. ____ Overview
   - b. ____ Economic
   - c. ____ Wood promotion
   - d. ____ Turkey's forest products markets
   - e. ____ Chile's forest products
   - f. ____ Wood raw materials
   - g. ____ Sawn softwood
   - h. ____ Sawn hardwood
   - i. ____ Wood-based panels
   - j. ____ Paper, paperboard and woodpulp
   - k. ____ Certified forest products
   - l. ____ Value added forest products
   - m. ____ Tropical timber
   - n. ____ Annex tables and reference

3. Do you have any suggestions for topics and authors of future special chapters?
   Current market issues ECE region or non-ECE region country focus

4. How did you hear about the *Review*? _____
5. Did you download the WWW-version of the *Review*? Yes _____ No _____
   If yes, and you wish a printed version, please send a postal address.
6. The future of French and Russian translations is being discussed. Do you need this publication in either French? Yes _____ No_____ or Russian? Yes _____ No _____
7. Are you satisfied with the *Review*? Yes _____ No _____
8. Do you have any suggestions for improvements to either the paper or electronic version of the Review? _____

_____

Thank you again for your time in assisting us to improve the Review for our readers! Please return your survey to: info.timber@unece.org or by fax to: +41 22 917 0041

The *Forest Products Annual Market Review, 2001-2002* provides a comprehensive analysis of the UNECE region, including the Commonwealth of Independent States, Europe and North America. The *Review* covers forest products from the forest to the final consumer, i.e., from roundwood and primary-processed products to value-added products. Each issue includes extensive statistical information combined with an analysis of trends and developments. Standard statistics-based chapters are presented on sawn softwood, sawn hardwood, wood-based panels, wood raw materials and pulp and paper. Other annual chapters analyze markets for certified forest products, value-added wood products and tropical timber.

In addition, every year the *Forest Products Annual Market Review* contains a few special chapters highlighting market developments both within and outside the UNECE region. This year's special chapters are:

- Market effects of wood promotion;
- Forest products markets in Turkey;
- Forest products markets in Chile.

The *Forest Products Annual Market Review* and its predecessor publications have been published annually since 1948 by the UNECE/FAO Timber Section. Its goal is to provide the earliest comprehensive statistics and analysis on forest products markets. This information is intended for policy makers, researchers, investors and forest products marketing specialists in governments, research institutions, universities and the private business sector. This *Review* is intended as a background docu' for the UNECE Timber Committee's market discussions held at its annual session.

Further information about forest products markets, as well as information about the UNECE Timber Committee and the FAO European Forestry Commission is available on their websites (www.unece.org/trade/timber and www.fao.org/forestry/FO/STATBOD/Regional/Efc/efc-e.stm). Information about the UNECE may be found at www.unece.org and information about FAO may be found at www.fao.org.

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